SCORING FROM DIFFICULT ANGLES

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NOTA BENE: PRELIMINARY RESULTS
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Abstract. The allocation of talent is a crucial factor in determining the efficiency, inequalities, and growth trajectories of economies. While theoretical models consistently suggest that one of the main drivers of self-selection into different job market positions is opportunity costs, extensively testing this hypothesis using data proves to be extremely challenging. This paper empirically tests whether the initial conditions at birth can explain self-selection into high-risk (and thus remunerative) tasks. We collect a rich dataset on football players of English nationality and link this information with a set of macro and micro measures of economic performance. Our econometric analysis suggests a negative and significant relationship between the economic condition of the birthplace of players and their future economic performance. Furthermore, these results remain consistent even when changes in opportunity costs are driven by a quasi-experiment based on sudden and significant changes in regional funding from the European Union.

Keywords: skills, geographical mobility, initial conditions.

JEL classification: J24, R11, Z22.

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We would like to thank Davide Auteri for providing us the ARDECO dataset of the European Commission. All errors are our own. Marta Boczoń: Copenhagen Business School. Address: Department of Economics. Porcelænshaven 16A. DK - 2000 Frederiksberg, Denmark. Email: mp.eco@cbs.dk. Battista Severgnini: Copenhagen Business School. Address: Department of Economics. Porcelænshaven 16A. DK - 2000 Frederiksberg, Denmark. Email: bs.eco@cbs.dk.

Understanding the allocation of talent is one of the key research areas for analyzing and quantifying the success and failure of economic activities and for providing effective insights for policy interventions. Literature on economic growth has dedicated several contributions to the distribution of talent, which has been proven to be a crucial factor in determining the efficiency and growth trajectories of economies. Theoretical contributions, supported by micro- and macro-level qualitative case studies, show that economic activities are often affected by misallocation of the inputs of production and thus penalized in short- and long-run economic trajectories. However, quantitative analysis based on the misallocation of human capital on a large scale is quite rare. Even when detailed registered data are present, the (self-)selection of individuals into particular career paths is very often endogenously driven by the role of human capital, especially educational choices. Furthermore, as remarked by Guiso, Pistaferri, and Schivardi (2021) in their empirical application of the theoretical models of Lucas Jr (1978) and Rosen (1982), it is quite difficult to distinguish innate from acquired skills.

In this paper, we empirically test whether the initial economic conditions at birth can explain self-selection into high-risk and high-reward occupations. Specifically, we aim to investigate whether individuals born into contexts of poorer economic conditions, along with their parents, weigh the costs of selecting into a particular risky occupation against significantly lower opportunity costs compared to those in affluent areas. We draw inspiration from recent case studies by Oyer (2022) that focus on sport players: if this economic mechanism holds true, and controlling for the same individual and environmental characteristics, we would expect individuals from poorer areas to be much more likely to excel in their profession. These studies highlight a negative correlation between the trade-off of local opportunity costs and success in sports competitions. Furthermore, in different sports, there is plenty of prosopographical evidence showing how superstar players come from poor conditions from all parts of the world. If the biographies of Diego Armando Maradona (Burns, 2021) and Zlatan Ibrahimović (Ibrahimović, 2013) are just notable examples in football; the stories of Jesse Owens and Serena and Venus Williams show that the pattern from poor conditions to becoming superstars is similar regardless of geography, time, sport, and gender. On the other hand, the childhoods in rich areas of Switzerland or Germany of superstar tennis players Roger Federer and Steffi Graf, respectively, might suggest the opposite.

In order to understand whether initial conditions at birth influence the success of an appropriate career profile, we conduct empirical analysis by gathering data on professional and semi-professional football players, and integrating it with economic data. The use of these sports data provides various advantages: as noted by Palacios-Huerta (2023a) and as we illustrate later, these data are comparable to experimental data since they offer clean observability and precise measurement, a large panel dataset where exogeneity based on quasi-experimental variations can be exploited. Finally, sports data are not affected by the so-called Hawthorne effects; i.e., players are not likely to modify their behavior after institutional changes. Specifically, in our dataset, and unlike other sectors of society, sport careers in football are not affected by human capital investment. Furthermore, they enable us to merge this information with highly precise proxies of income, represented either by regional statistics from the European Union (EU) or by satellite data. Finally, we are able to exploit a variation that has been shown to be exogenous by Becker, Egger, and Von Ehrlich (2010), namely the increase in public investment in the northern part of the UK, which resulted in higher GDP per capita and employment rates.

Controlling for players', teams', and temporal characteristics, our results show a strong negative relationship between poor initial conditions at birth (and thus lower opportunity cost) and players' success. This relationship remains robust across a different set of robustness checks. More precisely, we consider different proxies for economic success based on both financial and sporting measures, which show coherent results. Moreover, we also consider different levels of geographical granularity, showing that this negative relationship persists independently of spatial size and potential spillover effects. Similarly, we conduct various tests based on players' and teams' characteristics to confirm that the nature of the mechanism is not confounded by other factors. Finally, the exogenous variation provided by the English case allows us to perform an econometric analysis based on a difference-in-differences framework to further support the causal effects of our analysis.

Our results can contribute to shedding light on several aspects. First, they provide evidence of the importance of initial economic conditions for success. This not only complements contributions in the general economic literature but also adds to the discussion introduced by Cook and Frank (2010), who analyze the characteristics and drawbacks of so-called "winner-take-all" markets (Lazear and Rosen, 1981; Lazear, 1995), wherein an increasing number of workers compete for a diminishing but increasingly substantial pool of rewards and which are becoming predominant in advanced economies. Second, it can provide additional insights to talent scouts for finding better opportunities for future champions. Given the type of our data and the results we have obtained from our econometric analysis, we observe a potential mechanism that might deserve to be studied in the future. More precisely, our data shows that players born in poorer areas are more likely to be born in the fourth quarter of the year. This result might shed light on the so-called "*relative age effect*", which shows that the birth period of sport champions follow consistent pattern.

The rest of this paper is structured as follows: In Section 1, we describe the data we have collected for our empirical analysis. In Section 2, we introduce the econometric framework. Furthermore, in Section 3, we leverage the exogenous variation in EU funding to examine the potential causal relationship between initial conditions and sporting success, and propose a mechanism. Finally, Section 4 concludes.

1. Data

Our analysis relies on three datasets. The initial dataset contains individual-level data of professional and semi-professional male football players and was constructed by compiling information available on the website Transfermarkt.com. Our sample is limited to players of English nationality born after the beginning of the 1980s. In our analysis, we focus exclusively on outfield players, excluding goalkeepers. Our sample consists of 8,458 players and encompasses 85,293 player-by-season observations. We track players' careers from the age of 16 up to the end of the 2022/2023 season.[1]

The other two datasets concern macroeconomic conditions at various geographical levels across Europe and globally. The first dataset, known as the Annual Regional Database of the European Commission's Directorate General for Regional and Urban Policy (ARDECO dataset), is compiled by the Joint Research Centre of the European Commission's Directorate-General using EUROSTAT data.[2]

This dataset comprises annual economic indicators for sub-regions of European Union member countries, known as 'NUTS' (*Nomenclature des unités territoriales statistiques*). The NUTS classification is hierarchical, dividing each country into three levels: NUTS 1, NUTS 2, and NUTS 3, with each subsequent level being a subdivision of the preceding one. The NUTS level for an administrative unit is determined based on demographic thresholds. Specifically, NUTS 1 covers regions with a population between 3 and 7 million inhabitants, NUTS 2 covers regions with a population between 0.8 and 3 million, and NUTS 3 covers areas with a population between 0.15 and 0.8 million. Using this dataset, we construct an annual measure of GDP per capita for all years spanning from 1980 to 2024 and all NUTS regions at levels 1, 2, and 3.[3]

[1] Summary statistics regarding our sample of players can be found in Tables B1 and B2 in Appendix B.

[2] Additional information on the ARDECO dataset can be found at the following link https://knowledge4policy.ec.europa.eu/territorial/ardeco-database_en#database

[3] To calculate GDP per capita, we divide GDP at constant prices in euros at 2015 ($SNPTD$) by the total population measured as an annual average ($SOVGD$).

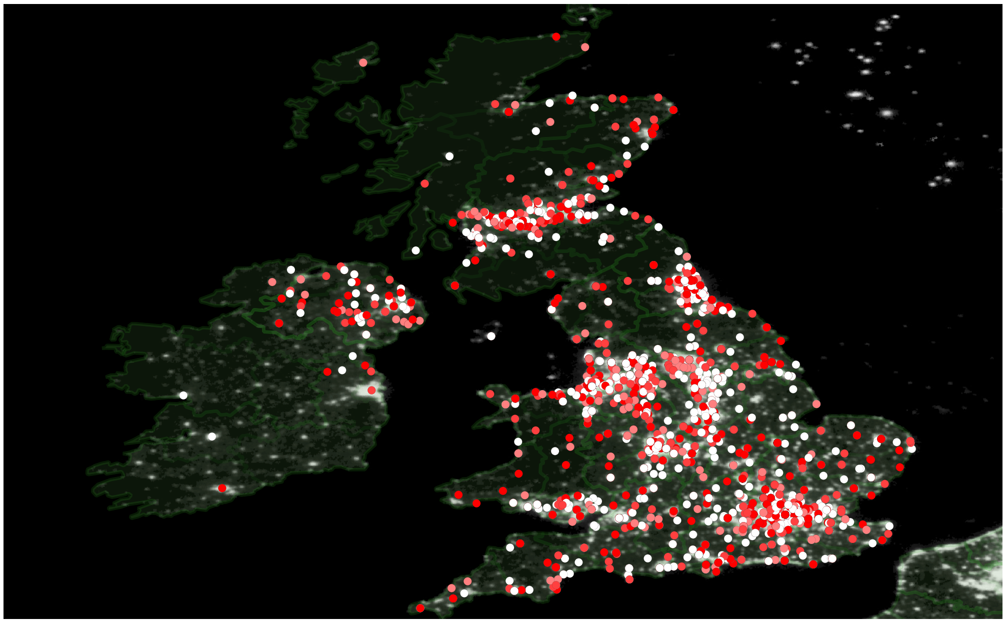
In addition to employing GDP per capita as a proxy for economic conditions, we utilize global satellite nighttime light data extracted from the *Light Every Night - World Bank Nighttime Light Data* database.[4] This database comprises the *Visible Infrared Imaging Radiometer Suite Day-Night Band* (VIIRS DNB) data from 2012 to 2020 and the *Defense Meteorological Satellite Program Operational Linescan System (DMSP-OLS)* data from 1992 to 2013. The data is measured in the radiance in Watts of the pixel of approximately 1 km^2 on a 0 to 63 scale. Drawing upon the statistical approach and insights introduced by Henderson, Storeygard, and Weil (2012), we consider satellite data on nighttime lights as a robust proxy for economic conditions at a highly granular geographical level. Finally, similar to Becker et al. (2010), the variation in EU funding is collected from several documents of the European Commission (1997, 2001, and 2007).

In Figure 1, we illustrate the geographical distribution of players' birthplaces for the British Isles and Ireland.[5] Each dot corresponds to a player's birthplace and is colored depending on the quintile rank of GDP per capita at the birth location. The white dots indicate the poorest regions, while the dark red dots represent regions with the highest GDP per capita. We plot the dots against the nighttime satellite data as of 1996. As confirmed by previous literature, the figure suggests a positive correlation between the two measures of economic activity. We also note a substantial variation in players' birth locations both geographically and by income. Given these two sources of variation, in the next section, we investigate the relationship between players' market values and other measures of career performance and economic conditions at the birth location.

[4]Additional information on the World Bank Nighttime Light Data can be found at the following link `https://registry.opendata.aws/wb-light-every-night/`.

[5]In Figure A2 in Appendix A, we illustrate the geographical distribution of birthplaces of all players in our sample. This figure reveals that while some players were born outside Europe, particularly in Africa, North America, and Australia, the highest density of birthplaces is concentrated in the UK.

Figure 1. Geographical representation of players' birth locations for the UK and Ireland



2. Empirical Analysis

Our primary specification for examining the relationship between the measure of economic activity at the player's birth location and subsequent career outcomes (such as market value and other indicators of sportive success) is as follows:

$$Y_{ist} = \beta_0 + \beta_1 Economic\ activity_i + \beta_2' X_{ist} + \epsilon_{ist} \tag{1}$$

where, Y_{ist} is a measure of career outcome of player i at team s in season t, *Economic activity* measures the level of economic activity at the birth location of player i, X_{ist} denotes a vector of control variables, and ϵ_{ist} is the error term.

Table 1 displays the regression results of Equation (1) for the natural logarithm of a player's market value[6] while controlling for player's year of birth, position, and season

[6]The validity of Transfermarkt's market values has been discussed, with concerns that user-reported values may influence player values rather than vice versa (see, for example, the article in the New York Times (https://www.nytimes.com/2021/08/12/sports/soccer/soccer-football-transfermarkt.html)). However, we believe this issue does not affect our results, as the "wisdom of the crowd" often accurately reflects

Table 1. OLS regressions: Economic activity at the birth location and player's market value

Dependent variable: **ln(market value)**	GDP per capita in NUTS level: 1	2	3	Light intensity	Light intensity
Economic activity	-0.004***	-0.003***	-0.002***	-0.023***	-0.248**
	(0.001)	(0.001)	(0.001)	(0.01)	(0.124)
Observations	73,667	73,667	73,667	30,406	30,402
Adjusted R^2	0.044	0.044	0.044	0.078	0.161
Geographical coordinates	No	No	No	No	Yes

Note: The table presents OLS regression results with standard errors in parentheses. In all but one regression three regression we report robust standard errors. In the second to last regression standard errors are clustered at the club and NUTS 2 levels. Constant, players' year of birth, position, and season fixed effects are omitted from the regression output. GDP per capita is expressed in thousands of euros. For ease of interpretation, the measure of light intensity is divided by one standard deviation. Significance at the 90%, 95%, and 99% confidence levels are indicated by *, **, and ***, respectively.

fixed effects. In other words, we compare market values in the same season of players who play in the same position, were born in the same year, but originate from regions of different levels of economic development.[7] In the first three columns we measure economic activity at the birth location using regional GDP per capita, where we consider three levels of geographic granularity: NUTS levels 1, 2 and 3. In the last two columns we proxy for economic activity using satellite light data.

Overall, we find that:

Result 1. *There exists a negative and statistically significant relationship between economic conditions at a player's birth location and their future returns in a professional football career. An increase of 1,000 euros in GDP per capita in the birth location results in a decrease in the player's average market value per season by between 0.2 and 0.4 percent, depending on the level of aggregation. For instance, for players born in Cambridge, an increase of 1,000 euros in GDP per capita in Cambridgeshire County at the time of their birth (NUTS 3) would decrease their future market value by 0.2 percent. An increase of 1,000 euros in GDP per*

players' real values (see, e.g., Haas, Kocher, and Sutter, 2004). Additionally, a robustness check using value rankings by year (reported in Table A1 in Appendix A yields very similar results.

[7]Following the methodology outlined by Angrist and Pischke (2009), we refrain from including team fixed effects due to their potential to act as "bad controls." Nevertheless, it is worth noting that incorporating team fixed effects does not affect the statistical significance of the *Economic activity* variable.

capita in both Cambridgeshire County and the rest of East Anglia (NUTS 2) would lead to a decrease of 0.3 percent. Finally, an increase of of 1,000 euros in GDP per capita in the entire region of East England (NUTS 1) would lead to a decrease by 0.4 percent. Moreover, the findings are reinforced when economic conditions are assessed using satellite light data as a proxy. Specifically, we observe that a one standard deviation increase in the measure of light intensity results in a 2.3 percent decrease in a player's average market value per season.

After examining the correlation between the level of economic activity at a player's birth location and their market value, we shift our focus to other career outcomes. In the subsequent analysis, we use light intensity as a proxy for economic activity. As in prior analyses, we control for the player's year of birth, position, and season fixed effects.

The regression results presented in Table 2 suggest that:

Result 2. *The worse the economic conditions at the birth location the higher the probability of becoming a forward and the lower the probability of becoming a midfielder, with no statistically significant effect on becoming either a defender. These results are in lines with the findings of Frick (2007), who explains the higher valuations of forwards due to the increased attention from supporters towards players who are more likely to score goals.*

With respect to the player's time spent on the field and find a negative and statistically significant relationship with the number of player's outings and minutes spent on the field. This result suggests that players who originate from poorer areas tend to play more often and for longer intervals at a time than their counterparts born in richer areas (see Table 3).

Finally, we find that despite a lack of statistically significant effect on either the number of goals scored or the number of assists provided, the sign of the effect is negative. This aligns with our hypothesis that players who originate in poorer areas are of higher productivity, as measured by their goal contributions.

Table 2. OLS regressions: Economic activity at the birth location and player's primarily position on the field

Dependent variable	Position on the filed		
	Defender	Midfield	Forward
Economic activity	0.000	0.010***	-0.011***
	(0.003)	(0.003)	(0.003)
Observations	30,406	30,406	30,406
Adjusted R^2	0.003	0.002	0.004

Note: The table presents OLS regression results with robust standard errors in parentheses. Constant, players' year of birth, and season fixed effects are omitted from the regression output. Significance at the 90%, 95%, and 99% confidence levels are indicated by *, **, and ***, respectively.

3. Investigating the Casual Effect and Potential Channels

The results reported in Section 2 provide strong evidence of a robust correlation between players' geographical income at birth and their future market values. However, our econometric results might be affected by potential limitations. First, since income at birth is a variable that remains constant over time, it may not be possible to detect its role once players' fixed effects are included. Second, our econometric specification may be affected by a failure to include one or more significant unobservable factors. Finally, and most importantly, our results might be merely spurious correlations.

Table 3. OLS regressions: Economic activity at the birth location and player's performance

Dependent variable	Active playing time		Goal contribution	
	# of outings	# of minutes	# of goals	# of assists
Economic activity	-0.195***	-13.351**	0.000	0.000
	(0.074)	(5.708)	(0.000)	(0.000)
Observations	29,530	29,530	1,224	948
Adjusted R^2	0.122	0.122	0.056	0.018

Note: The table presents OLS regression results with robust standard errors in parentheses. Constant, players' year of birth, position, and season fixed effects are omitted from the regression output. Significance at the 90%, 95%, and 99% confidence levels are indicated by *, **, and ***, respectively.

In order to address these issues, this section investigates the potential causal effect of geographical income at birth on players' market values by leveraging a quasi-randomized experiment based on the variation in the difference of supra-national money investment of the EU in different European regions. Between 1989 and 2006, the EU implemented a significant investment program during three distinct periods (1989–1993, 1994–1999, and 2000–2006), each time addressing one of the three primary objectives of the EU. [8] During the first investment period, EU funding was directed at regions whose GDP per capita was below 75 percent of the EU average in order to accelerate their economic development. Fulfilling Objective 1 involved the largest amount of transfer (quantifiable at about 1.1–1.4 percent of the GDP of the area) and was shown to have a significantly positive effect on GDP growth in the targeted areas

To estimate the causal effect of the level of economic activity at the player's birth location and theri future productivity we employ a difference-in-difference methodology by leveraging the regional and time variation in the EU funding. Our econometric specification is given by:

(2)

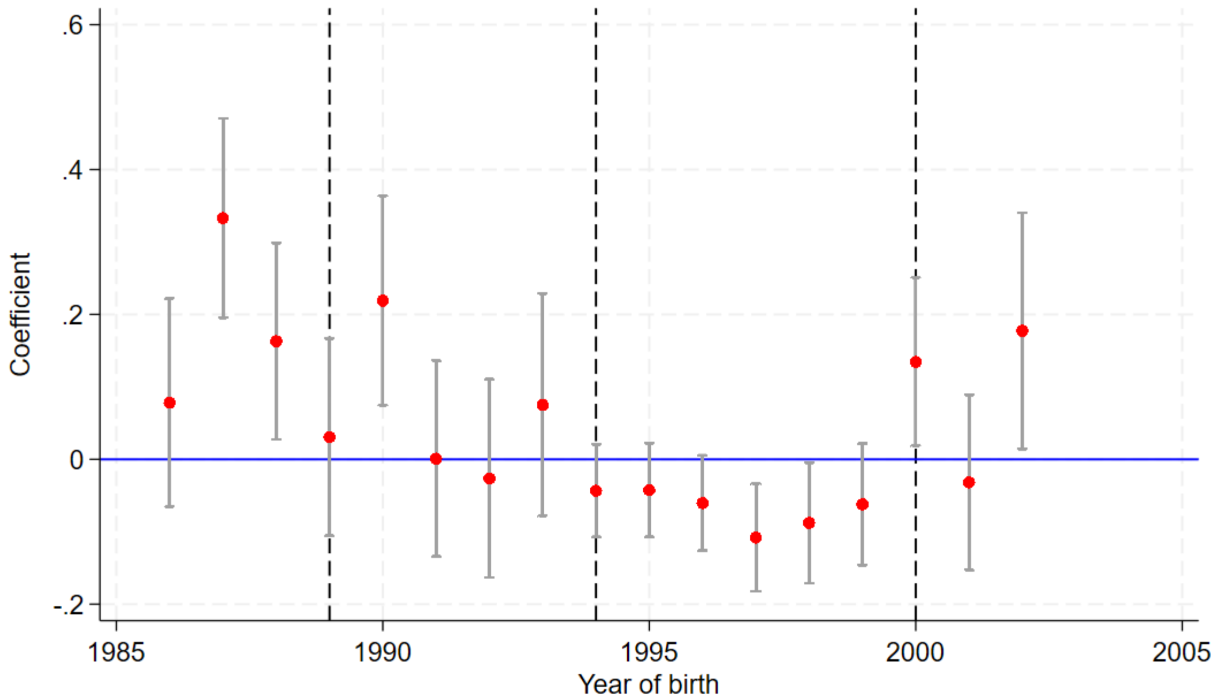
$$\ln(\text{Market value}_{ist}) = \sum_{t \in \text{Birth year}} \alpha_t \text{Birth year}_i \cdot \text{OBJECT}i + \text{Team}_s + \text{PLAYER}_i + \text{YEAR}_t + u_{ist}$$

where, in addition to the variables already displayed in Section 2, Birth year$i$ is a dummy variable equal to 1 if the player was born during that year and 0 otherwise, OBJECTi is a dummy which is equal to 1 if the NUTS2 area was interested in an Objective 1 or Objective 2 program. Furthermore, we complete the specification by including Team, Player's height and year of birth, and Year fixed effects. Finally, u represents the error term. The estimated coefficients $\hat{\alpha}_t$ will provide information on the potential *ex ante* and *ex post* effects of the increasing amount of the EU transfer. We consider the sample of players who are born between 1984 and 2003. Since we fix the year 1989 as the baseline,

[8]Objective 1 is to "promote the development and structural adjustment of regions whose development is lagging behind;" Objective 2 is "to support the economic and social conversion of areas experiencing structural difficulties;" and Objective 3 is to "support the adaptation and modernization of education, training and employment policies and systems in regions not eligible under Objective 1."

the size of the coefficients should be interpreted as the percentage change with respect to that year.

Figure 2. Differences-in-differences



Note: The figure shows point estimates α_t from Equation (2) and their respective 95 percent confidence intervals.

Figure 2 displays the coefficients' levels along with their respective 95 percent confidence intervals. We can observe that, despite the absence of clear pre-trends before 1989 (the year of the introduction of the Objectives, which nevertheless had minimal impact on England and Scotland), the effects are negative and significant after the project's introduction in 1994. This can be interpreted as additional evidence supporting the causal link between economic conditions and the market value of players.

3.1. **Possible channels.** What explains these effects? One of the plausible explanations relates to the presence of outside options. When parents perceive limited prospects for their children's development and career opportunities, they may be more inclined to support their interests in sports and arts. As a consequence, talent allocation becomes less

Table 4. OLS regressions: Economic activity at the birth location and player's quarter of birth

Dependent variable	Quarter of birth			
	1^{st} (Sep–Nov)	2^{nd} (Dec–Feb)	3^{rd} (Mar–May)	4^{th} (Jun–Aug)
Economic activity	-0.011***	-0.013***	0.021***	0.004
	(0.004)	(0.004)	(0.003)	(0.003)
Observations	22,795	22,795	22,795	22,795
Adjusted R^2	0.029	0.007	0.018	0.003

Note: The table presents OLS regression results with robust standard errors in parentheses. Constant and players' year of birth are omitted from the regression output. Significance at the 90%, 95%, and 99% confidence levels are indicated by *, **, and ***, respectively.

restricted. However, when parents are presented with a multitude of less risky options, they may discourage their children from investing in sports, thereby disrupting talent allocation and preventing potentially valuable players from pursuing careers in sports. As a result, more top-quality players may emerge from poorer regions on aggregate.

Another potential explanation stems from our examination of players' months of birth. When restricting our sample to players born in England we uncover a statistically significant and positive relationship between the economic conditions in the player's birth location and their month of birth. Our analysis reveals that players born in more economically disadvantaged regions and who subsequently outperform their peers are more likely to be born between September and February (See Table 4). Specifically, we find that a one standard deviation decrease in nighttime light intensity at the parents' locations increases the probability of their child being born between September and February by 1 percent. These findings are consistent with the phenomenon known as the "*relative age effect*", which arises due to the eligibility cut-off dates for school enrollment (in the UK, the cut-off for youth football academies is the first of September). Consequently, children born just after this cut-off date, benefiting from a longer growth and maturity period, tend to enjoy a comparative advantage over their peers born at the end of the eligibility year. Our results corroborate recent findings by Palacios-Huerta (2023b), who document the relative age effect in Spain, using data of the Spanish Championship *La Liga*. Importantly, our findings suggest that birth timing is not exogenous. The remaining open question is why parents residing in more economically disadvantaged regions give birth to their children at the turn of the year. We will attempt to answer this question in one of the upcoming revisions.

4. Conclusion

In this paper, we explore the relationship between players' economic conditions at the birth location and their future productivity. We construct a dataset of male football players of English nationality, including their market value, sporting performance, and demographics. Then, we geolocate their birth locations and construct proxies of economic activity at the time and place of players' birth. To proxy for economic conditions, we use data on GDP per capita from the European statistical offices and satellite night light data, which provides a granular measure of light intensity across the globe.

Our linear regression results shows a negative correlation between players' economic condition at birth and their future market values. Furthermore, we exploit a quasi-natural experiment based on different waves of regional investment from the European Commission. Here, a difference-in-difference regression analysis confirms a negative relationship between economic conditions at the player's birth location and their future productivity.

Finally, we attempt to shed light on the mechanism at play. By exploiting players' date of birth, we observe that lower economic conditions at birth are positively correlated with the probability of English-born players to be born between September and November. Given that the eligibility threshold in England for starting football schools falls within this period, this effect can explain the so-called "relative age effect," which shows that successful players in England tend to be born between September and November. All these results suggest that the endogeneity of the timing of births and their relationship with economic factors might explain the role of initial conditions on individuals' performances and inequality.

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Scoring from Difficult Angles

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Appendixes for online publication

Appendix A. Tables and Figures

Table A1. OLS regressions: Economic activity at the birth location and player's market value

Dependent variable:	GDP per capita in NUTS level:			Light
Rank of ln(market value)	1	2	3	intensity
Economic activity	-2.150***	-1.388***	-0.981***	-12.832
	(0.408)	(0.312)	(0.287)	(.)
Observations	73,667	73,667	73,667	30,406
Adjusted R^2	0.358	0.358	0.358	0.157

Note: The table presents OLS regression results with standard errors in parentheses. In the first three regression we report robust standard errors. In the last regression standard errors are clustered at the club and NUTS 2 levels. Constant, players' year of birth, position, and season fixed effects are omitted from the regression output. Significance at the 90%, 95%, and 99% confidence levels are indicated by *, **, and ***, respectively.

Figure A1. Geographical representation of the players' place of birth across the world

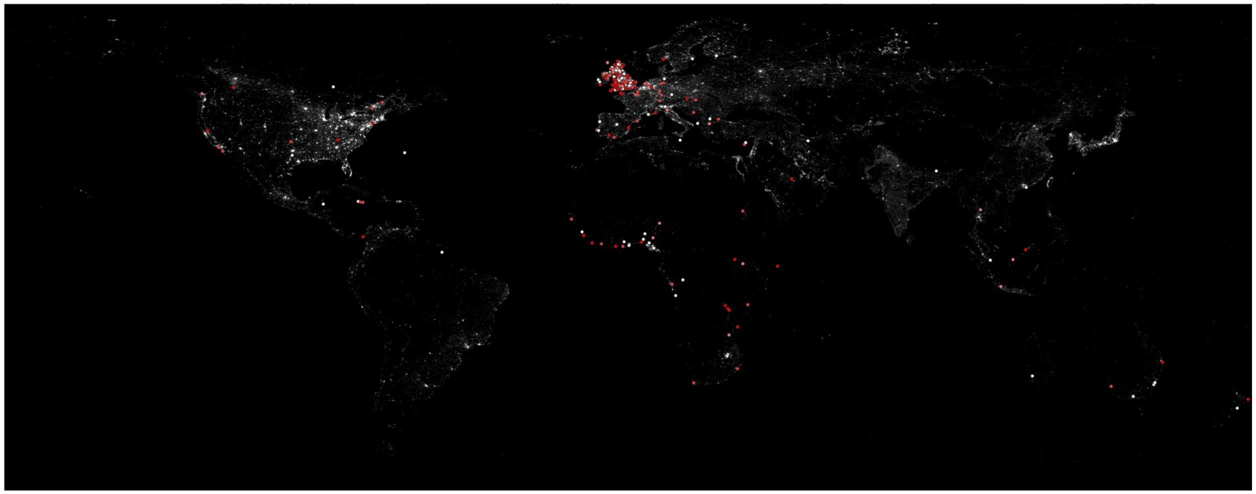
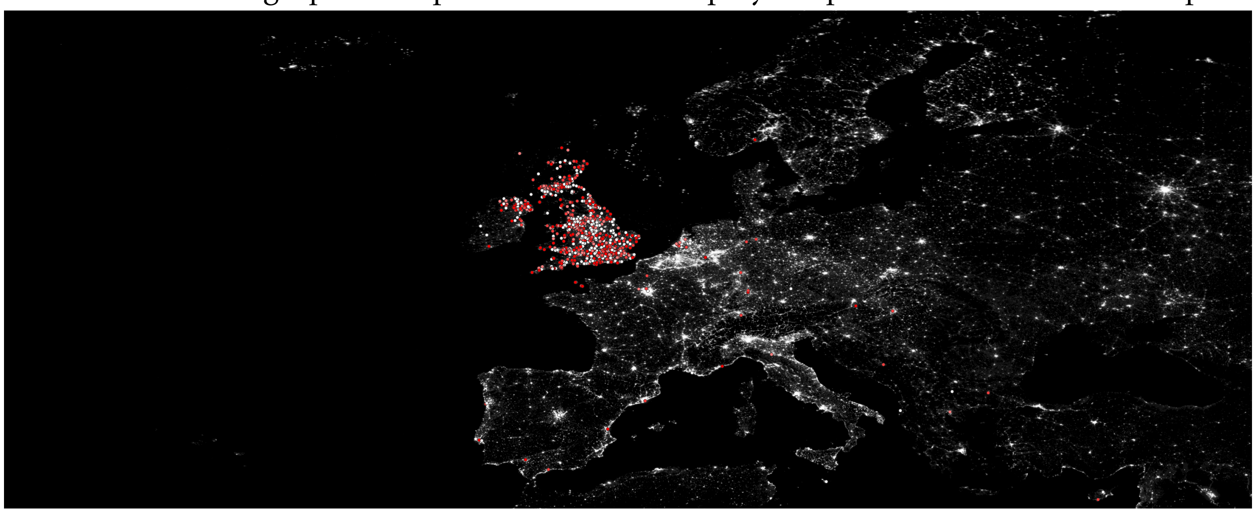


Figure A2. Geographical representation of the players' place of birth across Europe



Appendix B. Data

As depicted in Table B1 below, approximately one-third of the sample consists of players predominantly occupying attacking positions, another third comprises midfielders, and the remaining third primarily plays in defense.

Table B1. Players main field position

Players position	Attack	Midfield	Defense
Percentage	29.2	34.8	36.0

On average, players in our sample are active for 11 seasons, and over the course of their entire career, they reach a maximum market value of 460,000 euros. Within one season, they participate, on average, in 13 national league games, spend over 900 minutes on the pitch, score 1.4 goals, and provide 0.9 assists (see Table B2).

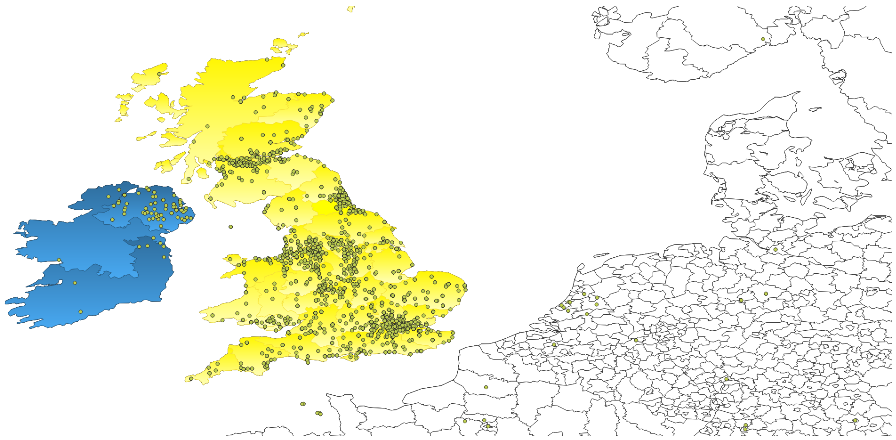
Table B2. Summary statistics of players' performance

	Mean	Median	Standard deviation	Min	Max	N
Panel A: Per player						
# of seasons	10.1	9.0	5.4	1.0	44.0	8,458
Highest market value	11.1	0.5	57.6	0.0	1,500.0	8,458
Panel B: Per player per season						
Market value	0.0	0.0	0.0	0.0	0.0	85,293
# of outings	13.1	8.0	14.4	0.0	61.0	83,706
# of minutes played	941.1	366.0	1,136.1	0.0	5,071.0	83,706
# of goals	1.4	0.0	3.1	0.0	41.0	83,706
# of assists	0.9	0.0	1.9	0.0	23.0	83,706

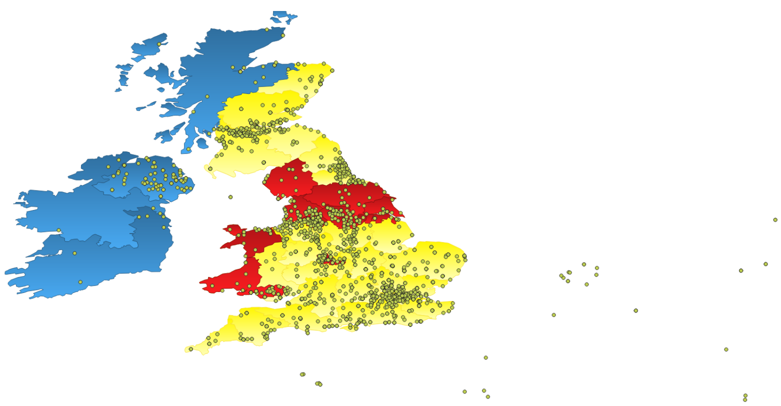
_ *Note:* The number of observations refers to the count of non-missing data points. Per-season statistics denote players' performances in national leagues and exclude domestic and international cup competitions. Market values are expressed in hundreds of thousands of euros.

Figure A3. Geographical representation of the players' place of birth and EU Objectives in UK and Ireland

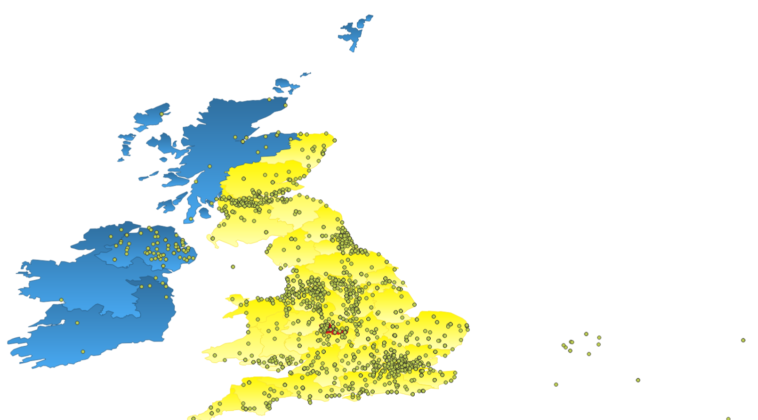
Panel A. 1989-1993



Panel B. 1994-1999



Panel C. 2000-2006



Note: Areas involved with the Objective 1 program are marked in blue, while regions benefiting from Objective 2 are marked in red.