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BCA Research - The Most Important Of All Unimportant Forecasts 2nd Edition: 2022 FIFA World Cup

113-143 minutes

“Amongst all unimportant subjects, football is by far the most important.”

- Pope John Paul II

Four years ago, BCA Research released “[The Most Important of All Unimportant Forecast: 2018 FIFA World Cup](#),” where we tried to predict a World Cup winner for the first time in our company’s history. Putting together the collective skills of some of our brightest young minds and using the same research fundamentals that have helped us call markets for more than 70 years, we developed a quantitative model to forecast the world’s most popular sporting event.

Rather than a one-off effort, we wanted to make this World Cup report a tradition – an opportunity for every new generation of young BCA researchers to improve on the forecasts of the previous one. Using the lessons from the 2018 tournament, we revamp our approach in this 2nd edition by adding new variables, improving on our methodology, and broadening into new areas of analysis.

For our clients, we hope this report provides a much-needed respite from the bear market in risk assets, furiously hawkish central banks, decades-high inflation, and the war in Ukraine. In retrospect, 2018, where Trump’s tweet were investors’ biggest worry, was a tame year. The following pages should provide you with an opportunity to step back from the chaos of financial markets in the days before the holidays.

However, regular BCA readers will also find that we do not stray too far from our macro-DNA. The Beautiful Game is, after all, inseparable from those who play it – shaped by the same forces that have transformed the world over the past few years. As a

result, themes that have been staples of our research in the recent past such as COVID, globalization, nationalism, and the energy crisis also make an appearance in this report.

This BCA Special Report is structured as follows: In our **Foreword**, Clocktower Chief Strategist Marko Papić – former BCA Geopolitical strategist – discusses his love for the game of football and makes the case for why this sport makes such a good pairing with macro analysis. In **Section I**, we present our revamped World Cup model, providing a forecast for each stage of the competition. The end of this section includes a discussion by Simon Kuper and Stefan Szymanski, authors of the New York Times best seller *Soccernomics*, where they reflect on the difficulties of predicting World Cup winners. **Section II** then introduces several interesting qualitative narratives, focusing on specific teams attending this year's competition. Finally, **Section III** discusses some broader macro narratives that have seeped into the world of football.

May this report be as entertaining for you to read as it was for us to write.

Over my near-decade long career at BCA Research, the firm broke with many traditions. For starters, they hired *me*, a political scientist, to launch the firm's first foray into geopolitical analysis. The 2010s were a bumper crop decade for geopolitics, but that was not clear in the early years. Many of the market calls my team and I produced were highly controversial – given that the framework we employed was a dramatic departure from the 70+ year analytical tradition anchored in macroeconomics – causing much heartburn for my colleagues.

None of the indigestion singed as much as my decision to initiate the firm's first World Cup forecast in 2018! Not only was it the first time in 70 years that BCA Research would spend considerable company resources¹ on... well essentially on a "joke analysis," but the firm's first foray into sports betting forecasting was done on... *soccer*? For a company seeped in Canadian – nay... *La Belle Province*! – traditions (read: hockey, hockey, hockey, some *cabane à sucre*, and more hockey), this was heresy!

What makes BCA Research special, however, is that aside from its "off Wall Street" roots in Montréal, it is also a deeply multicultural organization. Reflecting Canada's stature as the world's top immigrant destination, the majority of BCA labor force is today comprised of immigrants, with nearly everyone in the firm being

either a first- or second-generation immigrant. As such, the water cooler conversations are as much about the young striker Erling Haaland's latest exploits as about the – inevitably tragic and morose – fortunes of the *Habs*. Not to mention that the firm's amateur soccer team is legendary in the Montréal community!²

But there is more to this analysis than just our collective love of football. There is something about the “beautiful game” that makes it eminently conducive to a top-down, *macro*, analysis that BCA Research is renowned for.

As a young kid growing up in 1980s Yugoslavia, I was obviously weaned on football. In the Papić household, however, football was more than just a sport. It was a mirror to history, geopolitics, and the economic developmental paths taken by various nations.

My father introduced me to macro analysis through a mixture of politically incorrect Eastern European stereotyping – “Koreans go *hard*, Marko... *hard*” – and football (sports-related, but also essentially politically incorrect stereotyping) – “Germans are disciplined, never tire, and *press all game*.” He boiled every country's football tactics down to a set of immutable characteristics, the way a geopolitical strategist cuts through the news flow and the noise to create a net assessment.

Italians played defensively – *catenaccio* – because, well, they couldn't attack to save their lives. The English tried to lob the midfield with long balls and target mammoth strikers. Americans played with a naïve earnestness that was only possible for a New World power, unafraid and unaware of certain defeat. The Dutch *totaalvoetbal* was as rehearsed and clinical as their integration into the global supply chain. And Yugoslavia... we played with the creativity and passion of Brazil coupled with the tragicomedy of Argentina. Any day, *Plavi* could beat (or lose...) to anyone.

My passion for football eventually waned, replaced by a fanaticism for basketball and its fast paced, player-centered dynamism. However, the top-down, macro mentality instilled by my father remained.

Football, especially *international* football, is all about the system. A team can have multiple stars on its roster, but if they do not mesh quickly enough for a tournament like the World Cup, they will lose ignominiously. To fast-track the meshing process in the brief time that national teams must gel their stars, national teams adopt a particular style that is easy to slot players into. That is why a Lionel

Messi reminds of a Diego Maradona in the Argentina jersey. They are not the same player, but they play a similar role on the national team because... because it always was like that, and it always will be. It *must* be if a national team is to become more than a sum of its parts.

As a young kid, I remember watching my dad sit at the edge of a small coffee table in our tiny Belgrade apartment, puff his cigarettes like a skyscraper on fire, and decree (10 minutes into the game) which team would win, why, and by how much. I would protest, point out the quality of the players, the big names on the roster, and their stats in club football back in Spain, Italy, or England. None of it mattered to my dad. He had “read” the macro context and made his forecast.

Much to my annoyance, he was correct on all counts more often than not.

My father’s passion for top-down football handicapping got me hooked on the macro and geopolitical perspective but working at BCA Research allowed me to perfect it.

There is something tragic and melancholic about the macro lens. It denies us the very core of Enlightenment – human agency – upon which most of our modern progress is based on. Only football is like this. A Ronaldo or a Messi is *not* enough to bring home the World Cup trophy. Unlike with a Giannis or a LeBron, football does not allow a superhuman athlete to put the team on their back and will their team to a victory. A winning team in football “connects the dots,” it doesn’t just ride its star performers. The macro framework posits that the whole is greater than the sum of its parts, that the context and the material constraints are more important than the quality and preferences of Great Men and Women.

Capturing the winning attributes of a national football team is, therefore, a true piece of art, just as a strong macro analysis can be a masterpiece. A macro analysis must distill how the various economic and geopolitical intangibles interact and focus on the market-relevant second and third order effects. A World Cup forecast is similarly not just about assessing the quality of the players on the field. This is not about generating a coefficient for the combined quality of the roster, as a basketball forecast would do. Instead, a World Cup forecast is about understanding how the quality of the players interacts with the style of play of the national team itself. It is about mixing the present reality with the immutable

variables of tradition, history, and the material constraints.

I have not read the forecast you are about to read. However, I know very well the quality of the analysts that produced it. And I am incredibly excited to see where they take the project I initiated four years ago. I am certain that it will dwarf the scale of the original and that it will showcase the intellectual rigor, analytical prowess, and the wit that have made BCA Research analyses legendary.

Enjoy!

Yours,

Marko Papić

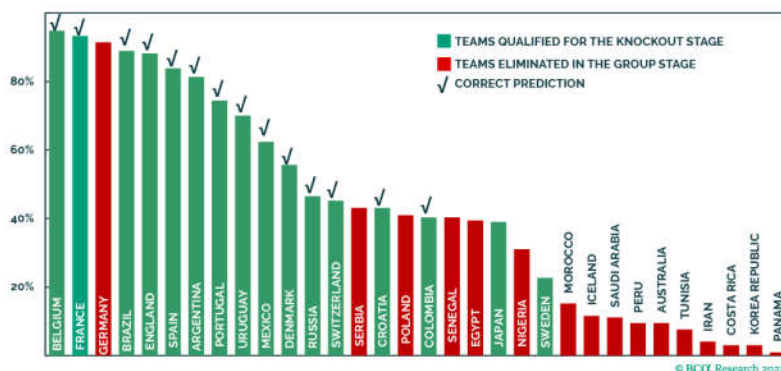
Chief Strategist & Partner

Clocktower Group

In 2018, our model forecasted 60% of the group stage games correctly while also predicting 14 out of the 16 teams advancing to the knockout stage (**Chart 1**). In addition, it correctly predicted the final group rank for 12 of the 16 teams which qualified for the elimination round.³ The poor performance of Germany and Spain misled our model and partly explains why it only correctly predicted how far five out of the sixteen teams went in the knockout stage. However, we take solace in the fact that our model predicted that France would reach the final.

Chart 1

Performance Of Our 2018 Group Stage Model



We stick to the same framework we used in 2018 for this 2nd edition: A unique two-step model combining macro and micro variables as well as our very own *soccertise*. However, not satisfied with our 2018 forecasting record, we improved the model in three ways:

- We refined our methodology by adding a goal difference

estimator for the group stage. We also calculated the precise probability that each team has in finishing first, second, third or last in their group.

- **We modified some of the key player variables that our model uses in the knockout stages.** Football tactics have changed dramatically over the past few years, making historical relationships unreliable. We account for this with our new variable choices.
- **We added two control variables to our model:** The Home Advantage Dummy and the Winner’s Curse Dummy.

We rely on the database of player statistics used in Electronic Arts (EA) Sports FIFA video game simulation.⁴ Our sample now includes all matches played during the 2006, 2010, 2014, and 2018 FIFA World Cups, with 192 group stage games and 64 knockout stage games.

As we go to press, none of the 32 teams have made their final list of 23+ players official (the lists will be published in early November by FIFA). Therefore, we relied on the most recent World Cup qualifiers, the UEFA Nations League games, as well as recent friendly matches to come up with the most likely lineups for these teams.

We find the player ratings from the video game to be surprisingly accurate. Going back to the 2006 World Cup, every World Cup winner was ranked amongst the top in terms of top-rated players (**Table 1**).

Table 1
Video Game Player Data Accuracy

NUMBER OF TOP-RATED PLAYERS AMONG THE TOP 5 FOR EACH POSITION ON THE PITCH ACCORDING TO THE FIFA VIDEO GAME SIMULATION									
2006 WORLD CUP		2010 WORLD CUP		2014 WORLD CUP		2018 WORLD CUP		2022 WORLD CUP	
Brazil	11	Spain	14	Spain	12	Spain	8	Brazil	9
France	7	England	10	Germany	10	France	7	Portugal	8
Italy	6	Italy	10	Argentina	6	Brazil	6	Germany	8
Argentina	6	France	9	Brazil	4	Germany	6	France	7
England	6	Argentina	6	France	4	Argentina	5	England	6

NOTE: PLEASE SEE TABLE 8 ON PAGE 29 FOR MORE DETAILS.

To simulate the 2022 group stage matches, we use an Ordered Probit (OP) model estimated on past World Cup group stage games. Ordered Probit models are powerful when modeling an ordinal outcome (i.e., the response value has a strictly increasing ordering known prior to the estimation).

Football matches can end in either a loss, a draw, or a win, with a

well-defined order from loss to win. The Ordered Probit model therefore allows us to use this information, increasing the predictive ability of the model.⁵

The Ordered Probit model selected is represented using a continuous latent variable y_i^* that is linearly determined by a set of explanatory variables x_i :

$$y_i^* = x_i' \beta + \epsilon_i$$

Our observed ordinal variable, y_i , represents the outcome of each game in our sample, and can take on the values of loss, draw, or win. Therefore, the observed outcome is expressed as:

$$y_i = \text{loss, if } y_i^* \leq \gamma_1;$$

$$y_i = \text{draw, if } \gamma_1 < y_i^* \leq \gamma_2;$$

$$y_i = \text{win, if } \gamma_2 < y_i^*$$

The probability of observing a particular ordinal outcome is given by:

$$\Pr(y_i = \text{loss} \mid x_i, \beta, \gamma) = \Phi(\gamma_1 - x_i' \beta)$$

$$\Pr(y_i = \text{draw} \mid x_i, \beta, \gamma) =$$

$$\Phi(\gamma_2 - x_i' \beta) - \Phi(\gamma_1 - x_i' \beta)$$

$$\Pr(y_i = \text{win} \mid x_i, \beta, \gamma) = 1 - \Phi(\gamma_2 - x_i' \beta)$$

Where Φ is the cumulative normal distribution function and γ are arbitrary thresholds selected via log-likelihood maximization.

For this 2nd edition, we use the same variables as in 2018 to run our Ordered Probit (OP) model for the group stage games, as they continue to display the most explanatory power after the inclusion of the 2018 games to our sample:

- Team Average Player Rating
- Average Age - Forwards
- Average Number of Caps - Defenders
- Speed Positions Average Rating

The list of potential explanatory variables we considered are shown in **Table 2**.

Table 2

Variables Considered And Used For The Models

PLAYER-BASED VARIABLES	
Team Average Player Rating	
Team Average Potential Rating	Difference between the actual overall average rating and the potential overall average rating.
Average Rating - Goalkeeper	
Average Age - Goalkeeper	
Average Number Of Caps - Goalkeeper	
Average Rating - Defenders	
Average Age - Defenders	
Average Number Of Caps - Defenders	
Average Rating - Midfielders	
Average Age - Midfielders	
Average Number Of Caps - Midfielders	
Average Rating - Forwards	
Average Age - Forwards	
Average Number Of Caps - Forwards	
Spine Average Rating	We define spine as the combination of central backs, defensive midfielders and central midfielders.
Spine Average Age	
Speed Position Average Rating	We define speed positions as the combination of right and left backs as well as right and left wingers.
Speed Positions Average Age	
Forwards vs. Defense Match-Up Average Rating	Difference between the average rating of Forwards and the average rating of Defenders.
Forwards vs. Spine Match-Up Average Rating	Difference between the average rating of Forwards and the average rating of Spine.
Speed Positions vs. Defense Match-Up Average Rating	Difference between the average rating of Speed Positions and the average rating of Defenders.
Player GINI Coefficient	Calculated as half of the relative mean absolute difference of the players' rating in a team.
English Premier League	Number of players in the list of 23 playing in the English Premier League at the club level.
TEAM-BASED VARIABLES	
MOMENTUM	
Short Term	Based on the last 5 World Cup qualifying games for any given World Cup - adjusted for the difference in FIFA World Ranking. Note: Since the host of a World Cup does not need to go through the qualifiers, we used the 5 most recent international friendly games played by Germany (2006), South Africa (2010), Brazil (2014), and Russia (2018).
Long Term	Based on the relative FIFA World Ranking.
EXPERIENCE	
Caps	The deviation of a given national team average number of caps from the average number of caps amongst all the players participating in a given World Cup.
International Competitions	Sum of all the past FIFA international competitions played by every player on the team.
Age	The deviation of a given national team average age from the average age amongst all the players participating in a given World Cup.
Ability To Play Under Pressure	Number of players on a national team who played a Champions League final in the past 4 seasons.
SYNERGY	
Club Level	Coefficients based on the number of players for a given national team playing together at the club level.
Local League Level	Coefficients based on the number of players for a given national team playing in the same local league.
NOTE: THE FINAL EXPLANATORY VARIABLES USED IN OUR GROUP STAGE AND KNOCKOUT-STAGE MODELS ARE HIGHLIGHTED. THESE ARE THE VARIABLES THAT ENTER OUR MODELS AND ARE SUPPORTED BY ACADEMIC LITERATURE.	

“Talent wins games, but teamwork and intelligence wins championships.” Thus said six-time NBA champion Michael Jordan. Our model confirms that the insight from the basketball legend applies to football as well, as average team talent – based on the mean of individual player overall attributes taken from the EA Sports database – is the most significant predictor of game success in both stages of the competition. However, this variable becomes less important in the knockout stages, as the ability to play as a team (“teamwork”), as well as particular tactical matchups (“intelligence”), become paramount for winning the tournament. This is because, in the late stages of the competition, the talent differential between teams narrows substantively.

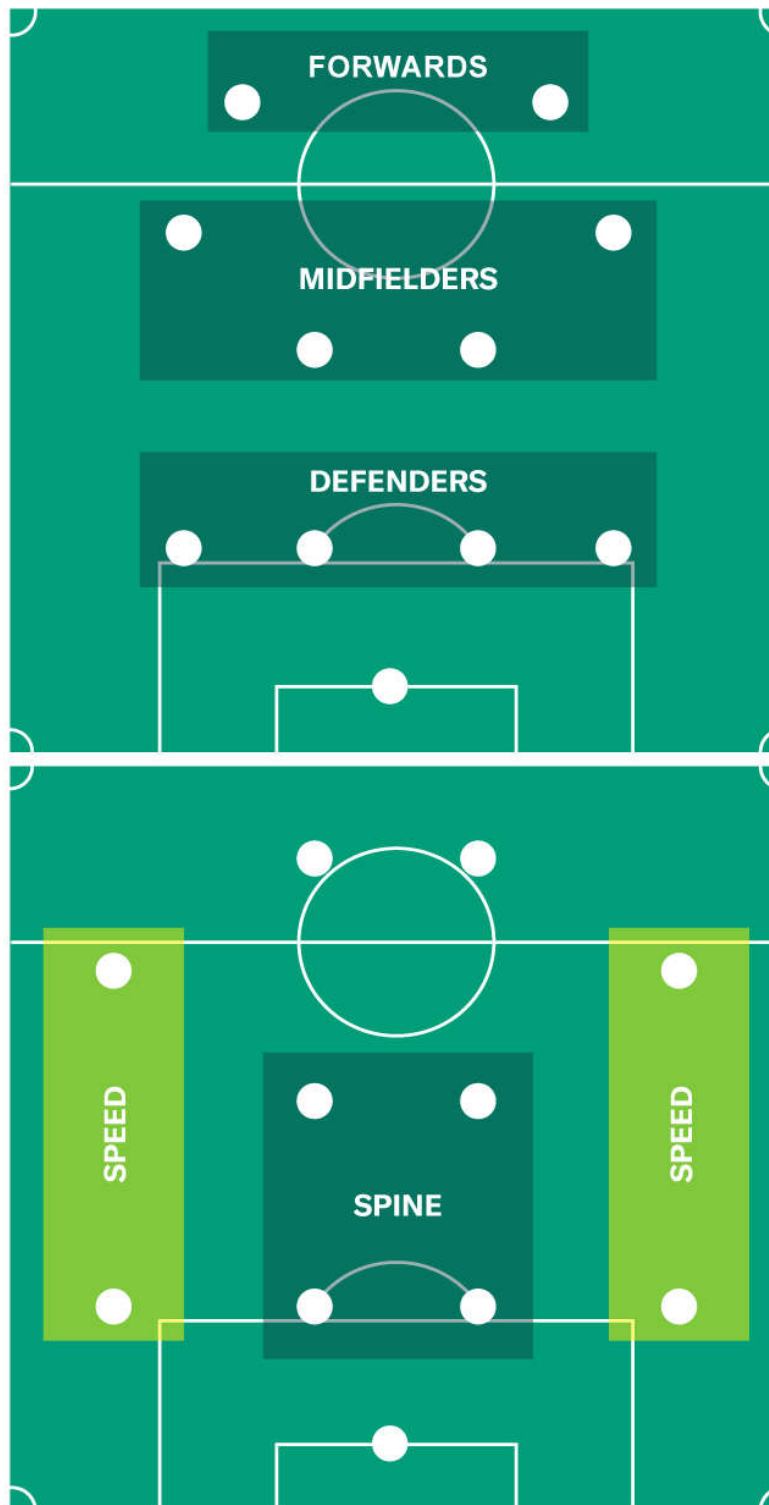
In the group stage, teams with younger forwards tend to perform better than teams with older forwards due to the highly physical demands of the position. Forwards perform the highest degree of high-intensity efforts (sprinting and sudden changes of direction)

and experience the most amount of physical contact among all positions in football.⁶ Considering that these abilities tend to peak in the early-to-mid-20's for most professional athletes, it is no surprise that our model gives a premium to youth in this position.⁷

Teams with more experienced defenders will tend to do better than teams with less experienced defenders. The physical demands on defenders are generally less strenuous relative to other positions, given that they dish out the pain. This means that defenders usually peak later than any other field position in football and that they are able to maintain peak performance sometimes well into their 30's. What defenders lack in athleticism they must make up in game IQ, as anticipation, composure, and tactical awareness are all acquired skills which improve with experience.

Figure 1

Position Definitions



Teams with superior talent in their speed positions (full backs and wingers) will perform better in group stages (**Figure 1**). Academic research has shown that counterattacking football is the most effective tactic against unbalanced defenses.⁸ Wingers and full backs are crucial for both developing and defending against a counterattack as they cover the least congested part of the pitch,

where there is generally the most space to run. Interestingly, this variable becomes less important in the knockout stages. This is most likely because teams with skilled and fast wingers can easily exploit the space conceded by the tactically disorganized defenses of easier opponents that populate the early stages of the competition. In the later stages, teams are generally more tactically disciplined.

For each game, our model uses the spread between Team 1 and Team 2 of each explanatory variable to determine the probability of Team 1 winning the game. **Table 3** lists all 32 teams and their descriptive statistics on the four explanatory variables.

The team average ratings are the core variables in our group stage model. However, due to the high level of multicollinearity in the disaggregated player rating variables, we could not capture the entire set of information from these individual variables.

Table 3

Descriptive Statistics: Group Stage Models Explanatory Variables

TEAMS	AVERAGE PLAYER RATING	FORWARD AVERAGE AGE	DEFENDERS AVERAGE CAPS	SPEED POSITIONS AVERAGE RATING
ARGENTINA	82.3	29.4	37	84.8
AUSTRALIA	70.0	28.3	16	69.7
BELGIUM	80.9	26.7	76	80.8
BRAZIL	83.9	26.2	55	83.6
CAMEROON	73.4	28.0	29	72.4
CANADA	72.5	24.0	27	73.2
COSTA RICA	69.1	25.5	52	68.2
CROATIA	78.7	26.5	10	76.5
DENMARK	76.3	26.7	40	75.0
ECUADOR	73.5	28.3	20	75.0
ENGLAND	83.9	25.0	34	84.5
FRANCE	85.3	29.3	27	84.0
GERMANY	83.9	26.0	20	82.0
GHANA	74.9	28.5	16	72.7
IRAN	69.5	28.8	40	70.8
JAPAN	74.5	27.7	46	74.1
KOREA REPUBLIC	72.5	27.3	52	72.9
MEXICO	76.7	27.0	44	76.8
MOROCCO	75.5	27.0	32	79.3
NETHERLANDS	81.5	24.7	37	79.2
POLAND	75.9	28.0	39	73.4
PORTUGAL	84.0	27.5	33	83.3
QATAR	65.0	28.4	67	65.0
SAUDI ARABIA	69.5	27.5	19	69.9
SENEGAL	77.3	25.4	33	77.7
SERBIA	77.9	26.2	24	80.0
SPAIN	82.8	25.0	33	81.8
SWITZERLAND	76.4	23.5	48	76.4
TUNISIA	70.9	30.0	38	70.8
URUGUAY	79.9	29.3	44	73.0
USA	75.5	23.7	23	77.7
WALES	73.1	27.3	45	73.0

As a result, our final probabilities are derived from the weighted average of two separate estimations, **Model 1** and **Model 2**. This allows our model to capture the importance of the speed positions

average rating in predicting the outcome of the group stage matches, which displays the highest marginal impact on the winning probability.

Therefore, our final model for the probability of winning a game is:

$$\Pr(y_i = \text{win} \mid \chi_i, \beta, \gamma) = E(\alpha M1, (1 - \alpha) M2)$$

Where:

Model 1 (M1) = f(Team Average Player Rating, Forward Average Age, Defender Average Caps)

And,

Model 2 (M2) = f(Speed Position Average Rating, Forward Average Age, Defender Average Caps), and α and $(1 - \alpha)$ are the weights given to each models

To favor our core model (M1), which uses the team average player rating variable, we assigned a weight $\alpha = 0.66$.

In the first edition, we simulated games and used the expected points to obtain the advance probability. This year, we are calculating the conditional probability for every team to finish in each place of their group. We do so based on each game's probabilities and the resulting points a team earns from a win or a tie. This allows us to use the probability to finish in 1st and 2nd place to obtain an advance probability.

Our newly introduced advance probability calculations require a tiebreaker for scenarios in which two teams have the same number of points. Therefore, we predict the goal differential, which is also used as the first tiebreaker in the actual World Cup group stages. We are using a Poisson model to obtain a probability distribution for the number of goals scored:

$$E(Y) = \text{Var}(Y) = \lambda$$

Where Y is the goal count⁹ and λ is estimated using the following Poisson regression model:

$$\log(\lambda_i) = \beta' \chi_i$$

This allows us to calculate the expected number of goals scored by a team in each game. Doing so for all teams, we determine their expected goal differential for the group stage. The model uses the same input variables as the Ordered Probit model and therefore

also utilizes the weighted average approach with two models as described above.

In 2018, we awarded a 5% “home advantage bonus” to Russia. This decision proved prescient, as Russia reached the quarterfinals of the competition, knocking out Spain, our model’s chosen winner.

Table 4
Measuring The Home Advantage

	HOME WIN		
	PRE-COVID	GHOST GAMES	P-VALUE
OVERALL	42.56%	39.05%	0.259
BUNDESLIGA	44.67%	> 32.53%	0.028**
2. BUNDESLIGA (SECOND DIVISION)	41.58%	43.21%	0.779
3. LIGA (GERMAN THIRD DIVISION)	41.65%	40.91%	0.881

SOURCE: Fischer, Kai; Haucap, Justus (2020) : Does crowd support drive the home advantage in professional soccer? Evidence from German ghost games during the COVID-19 pandemic, DICE Discussion Paper, No. 344, ISBN 978-3-86304-343-8, Heinrich Heine University Düsseldorf, Düsseldorf Institute for Competition Economics (DICE), Düsseldorf

This time, we formalize the Home Advantage Dummy by estimating a coefficient from past data. Home teams receive a boost because crowds can bias referees’ decisions in their favor.¹⁰ During the early stages of the pandemic, researchers were able to prove this empirically, as “ghost” games – matches played without fans – showed home teams winning at a much lower rate relative to pre-covid games. For example, in the German Bundesliga, which has the highest average number of fans in attendance per game among the major leagues, host teams won only 32.5% of the games compared with 44.67% pre-Covid, implying a substantial impact from home advantage (**Table 4**). Since “home advantage” has more to do with crowd support than a physical location, we decided to assign a half-home advantage bonus to neighboring country Saudi Arabia.

Why is it so hard to repeat as a champion? In his book *Showtime*, legendary basketball coach Pat Riley explains why success is often the first step towards disaster. Once a team wins a championship,

everybody wants more: More accolades, more recognition, more playing time, more money. What was once a cohesive unit of players making collective sacrifices to reach a goal becomes a group of individuals and clashing egos, more worried about their own interests instead of their common objective. He called this phenomenon “The Disease of More.”

Football teams are not immune to this disease. No team has won back-to-back World Cups in 60 years. Defending champions are also usually complacent and arrogant, banking on their previous success to carry them forward in the competition. This problem is compounded by the long periods between tournaments, which take place every four years. Players who are in their late 20s – in the prime of their careers - in one World Cup, find themselves losing a step in the following one, when they are in their early 30s. Competitors also have a lot of time to adapt. What were once revolutionary tactics in one World Cup become stale and predictable in the next one. Coaches are hesitant to make changes to their original winning formula, leading to stagnation.

Table 5
Behold The Winner's Curse

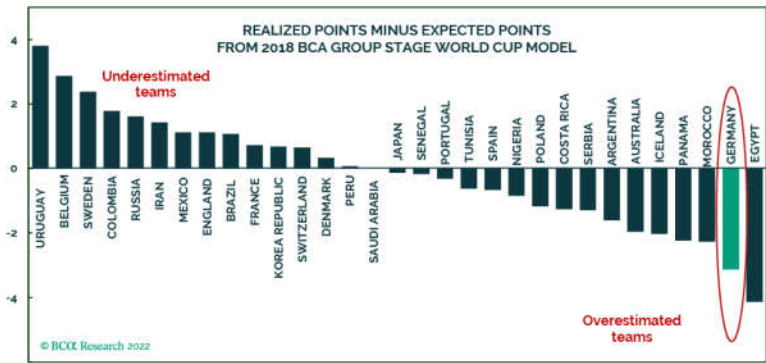
WORLD CUP	REIGNING CHAMPION	PERFORMANCE
2022	France	???
2018	Germany	Group stage
2014	Spain	Group stage
2010	Italy	Group stage
2006	Brazil	Quarterfinals
2002	France	Group stage
1998	Brazil	Final
1994	Germany	Round of 16
1990	Argentina	Final
1986	Italy	Round of 16

As a result, defending champions not only fail to repeat, but are often eliminated in embarrassing fashion. In the nine World Cups since the current format was implemented, four champions have exited in the group stage the following tournament, while two have exited in the Round of 16 (**Table 5**). The last three World Cup champions to defend their title have finished last in their group.

Brazil in 1998 and Argentina in 1990 are the two teams that have come the closest to achieving back-to-back wins, losing in the final to France and Germany, respectively. These were incredible teams: Brazil in 1998, with probably the most talented core players of the modern era, including Ronaldo, Cafu, Roberto Carlos, and Rivaldo; and Argentina in 1990, led by Diego Maradona, who many consider to be the best player of all time.¹¹ Still, for all their brilliance, it was not enough to reach the mountaintop on back-to-back occasions.

Failure to account for the Winner’s Curse led to the biggest forecasting mistake of our 2018 model. Germany was the second-worst underperformer in the group stage, according to our model. This error was also the most consequential in our overall predictions, given that Germany finished last in its group even though we gave them a 91% chance of advancing (**Chart 2**).

Chart 2
Don’t Underestimate The Winner’s Curse



In our 2nd edition, we attempt to capture the effect of the Winner’s Curse by assigning a dummy to the reigning champion. Based on the group stage data of the four World Cups in our sample, this dummy imposes a 28% penalty in the probability of winning in each game played by the reigning champions. Overall, the magnitude of the Winner’s Curse dummy represents the biggest determinant of who wins the World Cup. **Without it, France would go on to win the competition according to our model.** While we chose to stick to what the data suggested, there is an argument to be made that France could be less vulnerable to the Winner’s Curse than recent champions (**Box 1**).

Box 1
Winner’s Curse: Will History Repeat Itself Or Just Rhyme?

The Winner’s Curse takes its roots in the complacency of the reigning champions. Glorified managers – the Marcelo Lippis,

Vicente Del Bosques, and Joachim Löws, are deemed “untouchable” out of a sense of misguided gratitude. They also face the challenge of making the successful transition from one generation of players to the next.

When Italy lifted the trophy in 2006, the team was arguably at its peak level, with an average age of 27. The same players made the trip to South Africa four years later – only it was not the same team. Players were older and slower, and the Italian defense, led by 35-year-old *Ballon d’Or* winner Fabio Cannavaro, was overwhelmed.

The same happened to *La Furia Roja*. After dominating world football, culminating in two European titles and one World Cup, everyone knew what to expect from the Spanish squad. *Tiki-taka* was dead and its apostles, the Barcelona legends Xavi Hernandez and Andres Iniesta, were past their prime. Seven players of the starting eleven sent to Brazil were the same as in South Africa.

Germany made the opposite mistake. *Die Mannschaft* entered the 2018 World Cup with a completely different squad from the one that had won the tournament four years before. Only four players in the starting eleven had played in a World Cup before. The golden generation of German football – including Philipp Lahm, Bastian Schweinsteiger, Lukas Podolski, and Miroslav Klose - did not make the trip to Russia. Ultimately this lack of experience led to Germany’s downfall.

The experiences of all three teams highlight the fragile balance of keeping alive the magic of a golden generation, while at the same injecting youth into a team to avoid aging and stagnation. In a way, France seems especially suited to deal with this challenge. The average age of the French players when France won in 2018 was 25, which means that aging will not be as much of a factor for them. They also come with a solid mix of young players (Kylian Mbappé, Aurélien Tchouaméni, and Ousmane Dembélé), and experienced veterans (Karim Benzema, Antoine Griezmann, and Olivier Giroud).

Table 6
Home Advantage Is Real But Not Enough For Qatar

WORLD CUP	HOST	PERFORMANCE
2022	Qatar	???
2018	Russia	Quarter-finals
2014	Brazil	Semi-finals
2010	South Africa	Group Stage
2006	Germany	Semi-finals
2002	South Korea	Semi-finals
	Japan	Round of 16
1998	France	Winner
1994	United States	Round of 16
1990	Italy	Semi-finals
1986	Mexico	Quarter-finals
1982*	Spain	Second round*
1978*	Argentina	Winner
1974*	West Germany	Winner
1970	Mexico	Quarter-finals
1966	England	Winner
1962	Chile	Semi-finals
1958	Sweden	Final
1954	Switzerland	Quarter-finals
1950**	Brazil	Second of final round**
1946	Cancelled due to World War II	
1942		
1938	France	Quarter-finals
1934	Italy	Winner
1930	Uruguay	Winner

* UNIQUE FORMAT USED DURING THESE COMPETITIONS. TWO ROUNDS. OF GROUP MATCHES TO GET TO THE SEMI-FINALS.

** THE WINNER OF THE COMPETITION WAS DETERMINED IN A FINAL GROUP STAGE, PLAYED IN ROUND-ROBIN FORMAT.

On November 20th, **Qatar** will kick off the World Cup against Ecuador. Historically, host countries have done very well, often surpassing expectations. With the exception of South Africa, every host has made it out of the group stage (**Table 6**).

Our model predicts that Qatar will be the second host in history which fails to advance (**Table A**). Besides their AFC Asian Cup win in 2019, Qatar recently suffered heavy defeats to Portugal, Ireland, and Serbia, and only managed a draw against Azerbaijan, ranked 123rd in the world by FIFA. It will be crucial for Qatar to come out strong in the opening game, which is the only one our model

projects the host country to win.

Table A
Group A Summary Results

TEAMS		PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS	EXPECTED GOAL DIFFERENTIAL
NETHERLANDS		87%	6.1	2
SENEGAL		70%	4.8	1
ECUADOR		30%	3.3	-1
QATAR*		14%	2.3	-1
PROBABILITY OF TEAM 1				
TEAM 1	TEAM 2	WIN	DRAW	LOSS
SENEGAL	NETHERLANDS	21%	25%	53%
QATAR	ECUADOR	44%	27%	29%
QATAR	SENEGAL	22%	26%	52%
NETHERLANDS	ECUADOR	69%	20%	12%
ECUADOR	SENEGAL	14%	22%	64%
NETHERLANDS	QATAR	58%	24%	18%

* HOME ADVANTAGE +12%

Ecuador represents a manageable opponent for Qatar. They have a poor track record at the World Cup and they barely qualified, having to rely heavily on 32-year-old Enner Valencia. Valencia is the all-time top scorer for the national team and will have to continue scoring if Ecuador wants to advance past the group stage.

The **Netherlands** are returning to the World Cup after failing to qualify in 2018 and are looking to finally come out on top, having been defeated in the final three times in their history. Under coach Louis van Gaal, this team won all three games in the group stage and reached a 3rd place finish at the 2014 World Cup. More recently, the Dutch went undefeated in their UEFA Nations League games, disposing of Poland and Belgium in September. Coach van Gaal, one of the most outspoken critics of the host nation, will end up playing Qatar in the group stage.[12](#)

Senegal is arriving at the World Cup as the best African team. They won this year’s African Cup and qualified to the World Cup in dramatic fashion, winning a penalty shoot-out against Egypt on both occasions. Senegal has proven that it is a mentally strong side that knows how to win close games – an essential skill to advance in the knockout stages of the tournament. The first group match with the Netherlands will determine the group winner but both teams are expected to advance.

Group B offers some of the most intriguing matchups of the group

stage in Qatar. The face-off between US and Iran and the intra-kingdom derby between England and Wales are covered in newsworthy narratives. Our model predicts England and the US to easily headline the group, although both Wales and Iran can deliver an upset and the competition for the second spot will be especially fierce (**Table B**).

Table B
Group B Summary Results

TEAMS	PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS	EXPECTED GOAL DIFFERENTIAL	
ENGLAND	95%	7.0	3	
USA	75%	5.0	1	
WALES	23%	3.1	-1	
IRAN	7%	1.7	-3	
PROBABILITY OF TEAM 1				
TEAM 1	TEAM 2	WIN	DRAW	LOSS
ENGLAND	IRAN	84%	12%	5%
USA	WALES	51%	26%	23%
WALES	IRAN	49%	26%	25%
ENGLAND	USA	54%	25%	21%
IRAN	USA	9%	18%	73%
WALES	ENGLAND	7%	15%	77%

England qualified comfortably without a single loss, while scoring the most goals (39) and conceding just three. However, their recent form has raised concerns. The *Three Lions* failed to win in their last six matches while scoring only two goals from open play. All eyes will be on Gareth Southgate to prove that he can make tactical changes when games slide away and fix issues in the defensive setup.¹³ On the bright side, Harry Kane, Jude Bellingham, and Bukayo Saka have been in great shape since the start of the season and the overall player quality will allow England to dominate the group. Our model assigns them the highest probability of finishing first in the group and the best expected goal differential.

The **US** may be one of the least threatening second seeds, but England have failed to beat them in their two previous World Cup meetings. Gregg Berhalter is overseeing arguably the most talented generation of American players the country has ever produced. There is plenty of exciting young talent in the USMNT with the likes of Christian Pulisic, Gio Reyna, Tyler Adams, and Weston McKennie, all regulars at major European clubs. However, the team did not have the most convincing qualifying round, clinching the third automatic qualifying berth on goal differentials over Costa Rica. The US did not inspire much confidence in recent friendly

fixtures, with a loss to Japan, a goalless tie with Saudi Arabia, and just two shots on goal across both matches. There is hope that things may improve once a few key players return, and the model assigns the US a 75% chance of advancing.

Wales secured a spot in Qatar as the play-off winner defeating Austria and Ukraine. The team is making their first World Cup appearance since 1958. While moving past the group stage will be a tough feat for *The Dragons*, this team is certainly capable of punching above its weight, as it showed reaching the Euro 2016 semifinal. The focus will be on the captain and team talisman, Gareth Bale, who becomes a different force whenever he puts on a national jersey,¹⁴ and the youngster Brennan Johnson who will generate the most goalscoring threats in the final third. However, the team's recent form has been poor. Losses to Belgium and Poland in September saw Wales relegated from the Nations League top division. In fact, Wales won only one of their last eight games. The opening match against the US will be key to their hopes of advancing and the model has it as one of the closest games of the group.

Iran is coming to their third straight World Cup as the Number 1-ranked team in Asia. Even though our model has Iran as the underdog of Group B, the organized and resolute play makes the team far from a pushover. Coach Carlos Queiroz, who led the team from 2011 to 2019, was reappointed in September. Normally a coach swap less than three months before the tournament is not a positive sign, but the Portuguese is the most successful manager in Iran's history and oversaw solid World Cup campaigns in Brazil and Russia. *Team Melli* has maintained its momentum in recent friendlies, with a victory over Uruguay and a tie against African champions, Senegal. Although the Iranians will be playing relatively close to home, for political reasons, it is difficult to say whether there will be many Iranians in attendance. That is why we are not allocating Iran a "weaker form" of the home advantage. *Team Melli* will have to perform at the top of their game defensively and hope for some attacking prowess from star strikers Sardar Azmoun and Mehdi Taremi, if they wish to advance to the knockout stage. Playing against two of their biggest geopolitical rivals, the US and England, will surely add to the motivation.

Our model expects Argentina and Mexico to advance out of a group that may appear a little dull compared to the others (**Table C**).

Table C
Group C Summary Results

TEAMS		PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS	EXPECTED GOAL DIFFERENTIAL
ARGENTINA		80%	5.6	1
MEXICO		67%	4.9	0
POLAND		31%	3.6	-1
SAUDI ARABIA*		22%	2.7	-1
PROBABILITY OF TEAM 1				
TEAM 1	TEAM 2	WIN	DRAW	LOSS
ARGENTINA	SAUDI ARABIA	65%	15%	20%
MEXICO	POLAND	42%	27%	30%
POLAND	SAUDI ARABIA	47%	21%	32%
ARGENTINA	MEXICO	41%	28%	32%
POLAND	ARGENTINA	18%	24%	59%
SAUDI ARABIA	MEXICO	20%	15%	65%

* HOME ADVANTAGE +6%

Argentina is without a doubt favored to make it far in the tournament, especially since Lionel Scaloni has put an end to the “give-the-ball-to-Messi-and-pray” plan of the last three World Cups, thus raising the team’s overall level of play. The *Albiceleste* are the 2021 Copa America champions, where the team beat Brazil in the final, and are also on a 25-game winning streak (35 games undefeated) since July 2019. This will be Messi’s best (and last) chance at adding the elusive trophy. If not now, The *Albiceleste* may have to wait a while longer until they lift the World Cup trophy which they last won in 1986. That said, our model suggests Argentina will comfortably make it through the group stage, with a probability of 80%.

Mexico is the second favorite in Group C, with a 67% chance of advancing past the group stage. This will be Mexico’s 17th appearance at the World Cup - only Brazil, Germany, Italy, and Argentina have appeared in more editions of the tournament. However, unlike those teams, Mexico has never lifted the trophy. Mexico have been knocked out in the round of 16 in seven consecutive World Cups. The team also had two big problems during their World Cup qualifying campaign: lack of goals and underperformance from its star players. Head coach Tata Martino must solve *El Tri*’s goal drought, and perhaps recall Javier “Chicharito” Hernandez, Mexico’s all-time leading scorer.

Our models gives **Poland** a 31% chance of advancing out of the group stage. Poland has had much more World Cup success that

one might think, finishing third in 1974 and 1982. However, the country has only qualified for five out of ten World Cups since, getting knocked out in the group stage three times. Still, with a decent showing in their World Cup qualifying group, finishing second to England, Poland could upset the favorites in the group. The team is captained by FC Barcelona’s Robert Lewandowski, the most successful scorer in Polish football history and one the most prolific strikers in Europe in recent years. Lewandowski’s striking talent will need to be on full display to give Poland a chance of advancing further.

Last in the group is **Saudi Arabia**, with a 22% probability to advance. While the Gulf state is not technically a host country, we allocate a “half home advantage” given its proximity to Qatar. We believe that the country’s fanbase can more easily attend games to spur on their countrymen. But home advantage alone will not be enough to push Saudi Arabia beyond the group stage. The Saudi team also lacks recent success during preparations for the 2022 World Cup. Importantly, they suffer from too little exposure to crucial European-grade club football, since most of the team plays in local or regional leagues. Their recent draw against the US in a friendly game suggests that the level of play in this group will be too much for the Saudis to handle. As things stand, Saudi Arabia may run out of oil before its team manages to reach the round of 16 in a World Cup.

Group D: France, Australia, Denmark, And Tunisia

Although **France** is considered as one of the favorites for the title, our model predicts that they will fail to win their group – mostly due to the 28% Winner’s Curse haircut we apply to *Les Bleus* (**Table D**). Still, as opposed to the last three reigning champions, which all finished last in their group, France should be able to advance, securing second place according to our model.

Table D
Group D Summary Results

TEAMS		PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS	EXPECTED GOAL DIFFERENTIAL
DENMARK		90%	6.4	2
FRANCE**		63%	4.4	0
TUNISIA		25%	2.9	-1
AUSTRALIA		22%	2.8	-1
PROBABILITY OF TEAM 1				
TEAM 1	TEAM 2	WIN	DRAW	LOSS
DENMARK	TUNISIA	64%	22%	14%
FRANCE	AUSTRALIA	49%	27%	24%
TUNISIA	AUSTRALIA	36%	28%	36%
FRANCE	DENMARK	19%	25%	56%
TUNISIA	FRANCE	22%	26%	52%
AUSTRALIA	DENMARK	10%	19%	72%

* WINNER'S CURSE HAIRCUT OF 28%.

French manager Didier Deschamps will be forced to experiment with new talent or risk bringing players who are not fit to play.¹⁵ Despite the absentees, *Les Bleus* have the best average player rating in our model and the team ranks a solid third place in speed positions (see **Table 3** on page 11). Very few players can take over a game like PSG superstar Kylian Mbappé.

France will face a familiar foe in Denmark. This is the fourth time they meet in a World Cup group stage (a draw in 2018, a loss in 2002, and a win in 1998). The two teams have also met recently for the UEFA Nations League, both games resulting in a French defeat.

Denmark is not a team to be underestimated. Christian Eriksen's collapse last year helped forge a ferocious team spirit that pushed the team to the Euro 2020 semifinals and is still burning hot. No doubt our readers can remember that moment vividly, as it was one where time stands still – from the heroic action of captain Simon Kjær to the memorable protective circle of his Danish teammates surrounding the doctors attempting to save Eriksen's life. In his absence, Denmark heroically won 9 of its 10 qualifying games.

Over the last 40 years, **Tunisia** has participated in four World Cups but won only one game – a victory against... Panama. They also experienced a coach change at the beginning of the year after a disappointing performance at the African Cup of Nations. Jalal Kadri's team still managed to win the Kirin Cup last June against the host Japan with a score of 3-0, after defeating Chile 2-0 in the semifinals. However, Tunisia was reminded in September that facing world-class players is a different story, with its 5-1 loss to

Brazil in a friendly game. Our model gives them a 20% probability of advancing.

This will be **Australia’s** fifth successive World Cup appearance. However, the current team is unproven, and the *Socceroos* will find that the “Aussie DNA” of pace, power, and physicality promoted by manager Graham Arnold will not be enough to overcome their severe lack of World Cup experience. Only nine of the 28 players called for the last friendly game against New Zealand had participated in a World Cup. Australia also drew against Oman earlier this year. Can you even name one player from Oman? Or from Australia for that matter?^{[16](#)}

While our model predicts that France and Denmark should be favored to advance, do not expect Australia and Tunisia to be pushovers. In fact, the goal differentials inferred by our model suggest that while France and Denmark will win against their weaker opponents, the games will be close and we should not be looking for a plethora of goals. We anticipate the *Socceroos* and the *Eagles of Carthage* to make games difficult by sitting back with a low and compact defensive block and by using counterattacking opportunities and set pieces to score.

Groupe E features two of the most prominent teams of the tournament, in 2010 winner Spain and 2014 winner Germany. Both failed to deliver despite high expectations in 2018, with Spain losing in the Round of 16 to host nation Russia, and Germany succumbing to the Winner’s Curse and finishing last of their group. Expectations are once again high with their rejuvenated teams (**Table E**).

Table E
Group E Summary Results

TEAMS		PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS	EXPECTED GOAL DIFFERENTIAL
SPAIN		87%	6.0	2
GERMANY		83%	5.8	2
JAPAN		19%	2.7	-1
COSTA RICA		11%	2.2	-2
PROBABILITY OF TEAM 1				
TEAM 1	TEAM 2	WIN	DRAW	LOSS
GERMANY	JAPAN	60%	23%	17%
SPAIN	COSTA RICA	72%	18%	10%
JAPAN	COSTA RICA	41%	27%	32%
SPAIN	GERMANY	37%	28%	35%
JAPAN	SPAIN	11%	19%	70%
COSTA RICA	GERMANY	9%	17%	74%

Spain has completely overhauled its team, featuring young and promising players, following two disappointing World Cups. They recently reached the final of the UEFA Nations League and qualified for the World Cup with ease. As we go to press, it is still not clear what the team will look like since coach Luis Enrique is constantly experimenting with the players he aligns on the pitch. The other big question mark pertains to Spain’s ability to score goals, which is a recurring issue for *La Furia Roja*. This task will mainly fall onto Alvaro Morata, a striker with a shaky track record. Spain’s 2-0 defeat against a well-organized Swiss team in September is a worrisome sign for Spanish fans.

Germany is coming off one of the biggest disappointments in World Cup history, failing to win more than one game for the first time since 1978, resulting in a first-round exit and for the first time since 1938. Germany’s new coach, Hansi Flick, has only had a year to implement his tactics but comes armed with solid credentials. At the 2014 World Cup, he was the assistant coach to the victorious German side and won the 2020 Champions League title with Bayern Munich. In other words, he knows how to win and is very familiar with the core of the German team, which is built around Bayern Munich players. During qualifications, the team showed a very dynamic and aggressive pressing style, helping them win 9 out of 10 games, racking up 36 goals along the way.

Table 7
Spot The Pattern?

WORLD CUP	PERFORMANCE OF JAPAN
2022	Eliminated at Group Stage?
2018	Exit in Round of 16
2014	Eliminated at Group Stage
2010	Exit in Round of 16
2006	Eliminated at Group Stage
2002	Exit in Round of 16
1998	Eliminated at Group Stage

Behind the two favorites we expect **Japan** to finish third. This would match a pattern going back to 1998 (**Table 7**). There is some hope for Japan to surprise, however. Japan had a strong qualification period, scoring 12 goals and only conceding 4 in 10 games. Their coach, Hajime Moriyasu, can also rely on several players who have experience in Europe’s top leagues. At the last World Cup, Japan came very close to advancing past the Round of 16. They were up 2-0 against Belgium with only 20 minutes to go before losing in dramatic fashion in stoppage time. This year’s Japanese squad may finally have what it takes to break the pattern.

The group is completed by **Costa Rica**. They are a long shot to make it out of this difficult group after only qualifying through the play-offs with a 1-0 win over the *All Whites* from New Zealand. They will have to count on their best player, goalkeeper Keylor Navas, to give them a chance. However, Navas is no longer the #1 goalkeeper at his French club PSG and arrives at the World Cup with no official game time. Our model gives them 11% probability of advancing.

The game between Germany and Spain will most likely decide who wins this group. Our model gives Spain a slight edge, though the game will be one of the closest of the group stage. Save the date:

Sunday, November 27th!

Group F is by far the most balanced group, according to our model, despite the presence of two teams that reached the final four in 2018 (**Chart 3**). Compared to the other groups, Belgium and Croatia are only slightly favored to proceed to the knockout stage over Morocco and Canada; the average probability of passing to the next stage of the former two are only 20% higher than the latter two (**Table F**). This spread is close to 60% among the other groups.

Chart 3
Probability Of Proceeding To The Knockout Stage

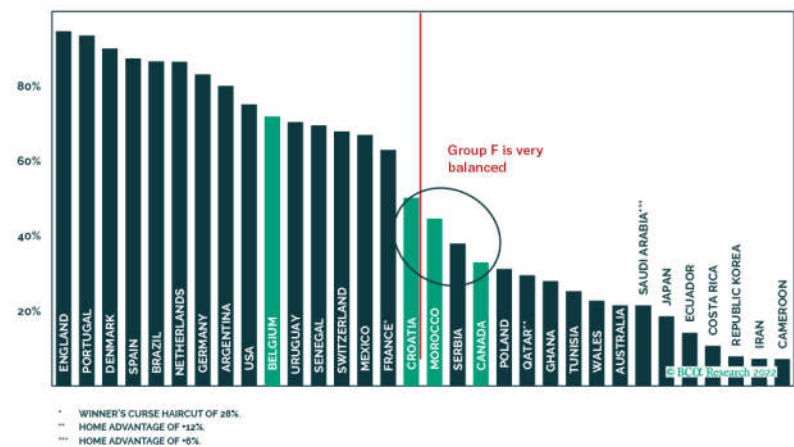


Table F
Group F Summary Results

TEAMS		PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS	EXPECTED GOAL DIFFERENTIAL
BELGIUM		72%	4.9	1
CROATIA		50%	3.9	0
MOROCCO		45%	4.0	0
CANADA		33%	3.6	-1
PROBABILITY OF TEAM 1				
TEAM 1	TEAM 2	WIN	DRAW	LOSS
MOROCCO	CROATIA	33%	27%	40%
BELGIUM	CANADA	47%	27%	26%
BELGIUM	MOROCCO	43%	27%	30%
CROATIA	CANADA	37%	28%	35%
CROATIA	BELGIUM	25%	27%	48%
CANADA	MOROCCO	30%	28%	42%

Our model predicts that **Belgium** will emerge top of the group, thanks to a much higher average player rating, boasting world-class talents like Kevin De Bruyne and Thibaut Courtois. However, this team is not without its issues. The Belgium “Golden Generation” has aged significantly. Although our model favors defenders’ experience, Toby Alderweireld and Jan Vertonghen, who are now

33 and 35 years of age, respectively, have gone from playing in Premier League heavyweight team Tottenham to playing in the weak Belgian league. They will struggle immensely to defend against players such as Achraf Hakimi and Anthony Davies who are known for their world-class speed. The performance of star-winger Eden Hazard also remains a big question mark, as he has seen little game time in recent months.

Croatia is a dangerous opponent looking to build on its success in the last World Cup. The team is still led by the seemingly eternal Luka Modrić, who is still a force to be reckoned with despite being 37 years of age. The same cannot be said of the other key players on the team, who have not aged as gracefully. Unfortunately for Croatia, its new generation of players have not lived up to their potential.

Morocco went unbeaten in its World Cup qualifying stage and reached the Arab Cup final last year. Three months before the start of the competition, Morocco fired the infamous coach Vahid Halilhodzic and replaced him with less experienced, Walid Regragui. This leaves the door open to a potential return of Hakim Ziyech, who previously retired from the national team because of Halilhodzic. Whether the skills of high-profile players such as Ziyech and Achraf Hakimi can bring the Moroccan team to surprise in group F remains to be seen.

The youthful **Canadian** side led by Alphonso Davies and Jonathan David dominated CONCACAF qualifying. This is only the second time ever that Canada qualifies for a World Cup.¹⁷ The team will hope to improve on the 1986 World Cup, where Canada lost all three group stage games, failing to score a single goal. Putting aside BCA Research's strong home-bias, we think Canada has the means to surprise. Our model predicts that Canada is one of the dark horses in the group, giving it a 36% chance of advancing to the next stage despite not being favored in any of the games.

Group G features betting market favorite **Brazil**. The *Seleção* has qualified for every single World Cup tournament since the competition was founded. Having ran through CONMEBOL qualifying undefeated, winning 14 out of 17 games, the team is the favorite to win this group. Even though it has not won the competition in 20 years, Brazil remains one of two non-European sides that has a realistic chance of clinching the title. Brazil comes to the 2022 World Cup with top-quality players in many positions on

the field (**Table 8**).

Table 8
Top Players In Every Position On The Pitch

FORWARDS					
LEFT WINGERS		STRIKERS		RIGHT WINGERS	
Neymar Jr	Brazil	Robert Lewandowski	Poland	Lionel Messi	Argentina
Sadio Mané	Senegal	Kylian Mbappé	France	Paulo Dybala	Argentina
Son Heung-min	South Korea	Cristiano Ronaldo	Portugal	Angel Di Maria	Argentina
Raheem Sterling	England	Harry Kane	England	Gabriel Jesus	Brazil
Jadon Sancho	England	Romelu Lukaku	Belgium	Ferran Torres	Spain
CENTRAL FORWARDS					
		Karim Benzema	France		
		Roberto Firmino	Brazil		
		Memphis Depay	Netherlands		
		Diogo Jota	Portugal		
MIDFIELDERS					
LEFT MIDFIELDERS		CENTRAL MIDFIELDERS		RIGHT MIDFIELDERS	
Leroy Sané	Germany	Kevin De Bruyne	Belgium	Serge Gnabry	Germany
Kingsley Coman	France	Luka Modrić	Croatia	Bukayo Saka	England
Carrasco	Belgium	Leon Goretzka	Germany	Otávio	Portugal
Filip Kostić	Serbia	Frenkie de Jong	Netherlands	Jesus Corona	Mexico
Ivan Perišić	Croatia	Vitinha	Portugal	Angel Mena	Ecuador
CENTRAL ATTACKING MIDFIELDERS			CENTRAL DEFENSIVE MIDFIELDERS		
		Thomas Müller	Germany	N'Golo Kanté	France
		Bernardo Silva	Portugal	Casemiro	Brazil
		Bruno Fernandes	Portugal	Joshua Kimmich	Germany
		Christopher Nkunku	France	Fabinho	Brazil
		Marco Reus	Germany	Rodri	Spain
DEFENDERS					
LEFT BACKS		CENTRAL BACKS		RIGHT BACKS	
João Cancelo	Portugal	Virgil van Dijk	Netherlands	Trent Alexander-Arnold	England
Alphonso Davies	Canada	Rúben Dias	Portugal	Kyle Walker	England
Theo Hernandez	France	Marquinhos	Brazil	Achraf Hakimi	Morocco
Jordi Alba	Spain	Thiago Silva	Brazil	Dani Carvajal	Spain
Marcos Acuña	Argentina	Antonio Rüdiger	Germany	Danilo	Brazil
GOALKEEPERS					
		Manuel Neuer	Germany		
		Thibaut Courtois	Belgium		
		Alisson	Brazil		
		Keylor Navas	Costa Rica		
		Hugo Loris	France		

Switzerland has a history of upsetting footballing giants: From eventual champi-ons Spain in 2010, to France in the 2020 Euros. For this World Cup, Switzerland has also topped its qualifying group, ahead of reigning European champion Italy. Switzer-land has quality players who can make the difference in the final third and a rock-solid defense to rely on.

Serbia was surprisingly successful during the qualifiers, topping its qualifying group with no losses. This group has plenty of offensive firepower, with strikers like Aleksandar Mitrovic and Luka Jovic in the squad. However, *Orlovi* will need to make sure that they keep clean sheets, to make it through to the knockout stages: Serbia scored 18 goals during the qualifiers but conceded nine.

Our model predicts that **Cameroon** will finish last in the group (**Table G**). Since its first World Cup appearance in 1982, the *Indomitable Lions* have participated in six tournaments, failing to

advance past the group stage in all but one of them. Cameroon won five out of six games to finish first in their qualification group, beat-ing Ivory Coast by two points to advance to the deciding match against Algeria. Karl Toko Ekambi scored the game-winning goal in extra time to secure Cameroon’s spot at the World Cup in Qatar via the away goals rule.

Table G
Group G Summary Results

TEAMS		PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS	EXPECTED GOAL DIFFERENTIAL
BRAZIL		87%	6.2	2
SWITZERLAND		68%	4.9	0
SERBIA		38%	4.0	0
CAMEROON		7%	1.7	-2
		PROBABILITY OF TEAM 1		
TEAM 1	TEAM 2	WIN	DRAW	LOSS
SWITZERLAND	CAMEROON	64%	22%	15%
BRAZIL	SERBIA	55%	25%	20%
CAMEROON	SERBIA	16%	22%	62%
BRAZIL	SWITZERLAND	47%	27%	26%
SERBIA	SWITZERLAND	26%	26%	48%
CAMEROON	BRAZIL	6%	13%	81%

Since 2014, when Fernando Santos became head coach, **Portugal** has been very successful, winning the Euros in 2016 and the UEFA Nations League in 2019. Their success has come in no small part due to their captain and talismanic striker Cristiano Ronaldo, who is now the all-time leading scorer for international football with 117 goals. There are now questions on whether time has run out for this legend of the game. At 37 years of age, Ronaldo has begun to show signs of slowing down, scoring only two goals so far this season. Coach Santos must make a difficult decision as to whether to continue playing the 37-year-old or to start relying on the new generation, which includes Liverpool’s Diogo Jota, AC Milan’s Rafael Leao, and PSG’s Vitinha. Still, regardless of who starts, their attacking talent should be enough to advance to the knockout stages (**Table H**).

Table H
Group H Summary Results

TEAMS		PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS	EXPECTED GOAL DIFFERENTIAL
PORTUGAL		94%	6.9	3
URUGUAY		70%	4.8	1
GHANA		28%	3.4	-1
REPUBLIC KOREA		8%	1.7	-3
TEAM 1	TEAM 2	WIN	DRAW	LOSS
URUGUAY	REPUBLIC KOREA	63%	21%	16%
PORTUGAL	GHANA	89%	19%	11%
REPUBLIC KOREA	GHANA	19%	24%	56%
PORTUGAL	URUGUAY	56%	24%	20%
REPUBLIC KOREA	PORTUGAL	4%	10%	86%
GHANA	URUGUAY	22%	25%	53%

Much like Portugal, **Uruguay** will enter this World Cup with a talented yet aging front line. Luis Suarez and Edinson Cavani are still forces to be reckoned with, but not as devastating as they used to be in years past. However, Uruguay should not be underestimated. Though it is the 135th country in the world in terms of population, with only 3.5 million people, Uruguay has consistently punched above its weight in the World Cup and should be considered favored to advance to the knockout stages.

South Korea could prove to be a spoiler for either Uruguay or Portugal, much like it was for Germany in the last World Cup. The Koreans qualified by winning seven and losing only one of their qualifiers. The team’s strength lies in its defense, which allowed only three goals in its 10 group matches. South Korea has qualified for ten World Cups in a row, but only twice has it advanced past the group stage, despite making it to the semifinals at home in 2002. It has also assembled an impressive group of players, led by Tottenham superstar Son Heung-Min.

Ghana rounds up Group H. After being eliminated at the African Cup of Nations, it stumbled through qualifying, needing a dubious penalty against South Africa to win the group before defeating Nigeria on the road in the playoffs. Otto Addo, who was given interim management of that game, can take pride in the way his team dominated the match despite the hostile environment in Abuja. Pay attention to the game against Uruguay. In the 2010 World Cup, Luis Suarez’ controversial hand ball at the goal line cost Ghana a berth in the semifinals.¹⁸ They will be looking for retribution.

The knockout stage is somewhat easier to model given that the set of possible outcomes is reduced to only {loss; win}. This difference with the group stage is not only relevant for the math behind our model; it is also relevant for the strategy teams employ during the games. Therefore, we simulated this part of our analysis using a probit model estimated on a sample of *only* knockout stage games from the 2006, 2010, 2014, and 2018 World Cups.

The binary choice probability of observing a specific outcome for the probit model becomes:

$$\Pr(y_i = \text{loss} \mid \chi_i, \beta) = \Phi(-\chi_i' \beta)$$

$$\Pr(y_i = \text{win} \mid \chi_i, \beta) = 1 - \Phi(-\chi_i' \beta)$$

Just like in 2018, we found the following factors to be the most important at this stage of the competition:

- Team Average Player Rating
- Club Level Synergy

In this 2nd edition, we made a couple of updates to the Knockout stage model:

- We added the Winner's Curse Dummy
- We replaced the Average Midfielder Rating by the Average Forward Rating and Forward Average Age as explanatory variables.

As with the group stage, the overall rating of the team – based on the average of individual rankings from the *EA Sports* database – is the most powerful explanatory variable. While the gap in player quality between teams in the group stage is often vast, the knockout stage culls the minnows, narrowing the gap in overall player quality between teams. At this stage of the competition, our model has to be supplemented with variables that test for teamwork and synergy.

Teams with more players from the same club tend to perform better in the knockout stages. This is evident from all the World Cup winners in our sample. Given the limited practice time that national teams have ahead of the tournament, the year-round experience of playing with teammates in club competition can provide a huge advantage. This is especially true for football teams from countries with major leagues - such as Germany, Spain, and Italy. Their players are more likely to cluster in the major clubs in those leagues, whereas players from smaller footballing nations have to

ply their trade in dispersed leagues and teams across the globe.

As with the group stage, we are applying a Winner's Curse Dummy to the reigning champion France. Unfortunately, since Brazil is the only defending champion to advance past the group stage in our sample, playing only two elimination games, there is no reliable estimate of the Winner's Curse for the knockout stages. Without solid evidence of the magnitude of the dummy in the knockout stages, we revert to 28%, the same value that we had in the group stages – albeit with a low conviction as to how big it should be.

In our 2018 model, we found that the average rating of midfielders was one of the most important variables when it came to predicting success in the World Cup knockout stages. Midfielders are key to orchestrating attacks, passing, and keeping possession, which at the time had been the hallmarks of effective football, evident in the last two World Cup winners Spain and Germany.

However, as we watched the games of the 2018 World Cup, we noticed a pattern: High intensity pressing, the act of applying pressure to recover the ball in the attacking half, had become widespread, severely disrupting possession-based play. (See **Box 2**)

Box 2

The History Of Pressing

The idea of pressing to win the ball back as soon as possible is not new. First employed by legendary Dutch coach Rinus Michels in the 70s, coaches throughout the years have used different styles of pressing to great success, from Arrigo Sacchi, who coached AC Milan to back-to-back Champions League wins in the 90s, to Pep Guardiola, with his 6-second rule to recover the ball at Barcelona.

However, over the last eight years, a new brand of super-high intensity pressing has revolutionized club football. Popularized by German coach Jurgen Klopp, *Gegenpressing* - German for counter-pressing - seeks to furiously attack the space where the opposition just gained possession, looking to pounce as soon as possible after recovering the football, when the defense is not fully set-up. This makes for excellent goal-scoring opportunities. In the words of Klopp: "No playmaker in the world can be as good as a good counter-pressing situation."

The one weakness with this style of pressing, which Klopp dubbed "Heavy Metal Football," is that it is incredibly demanding, requiring

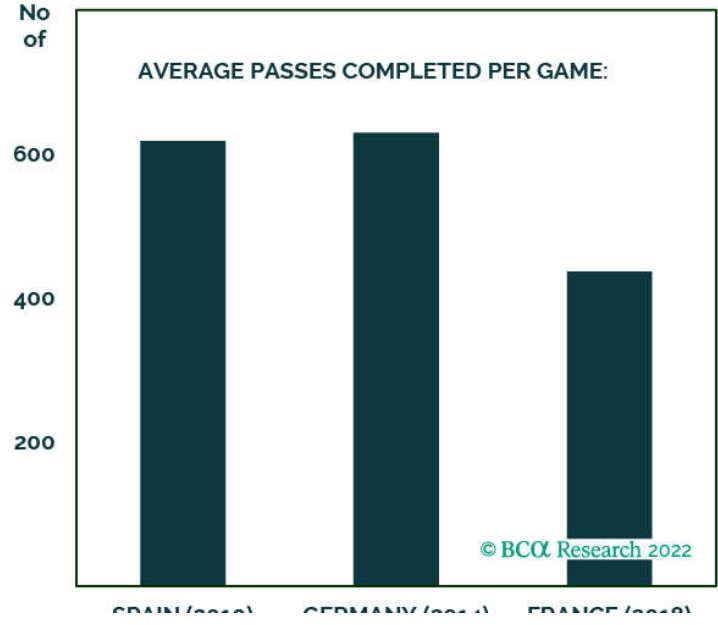
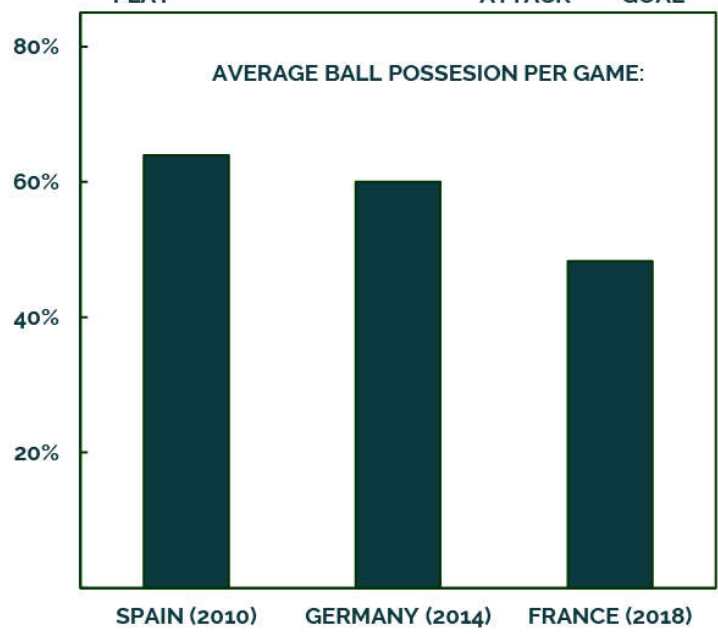
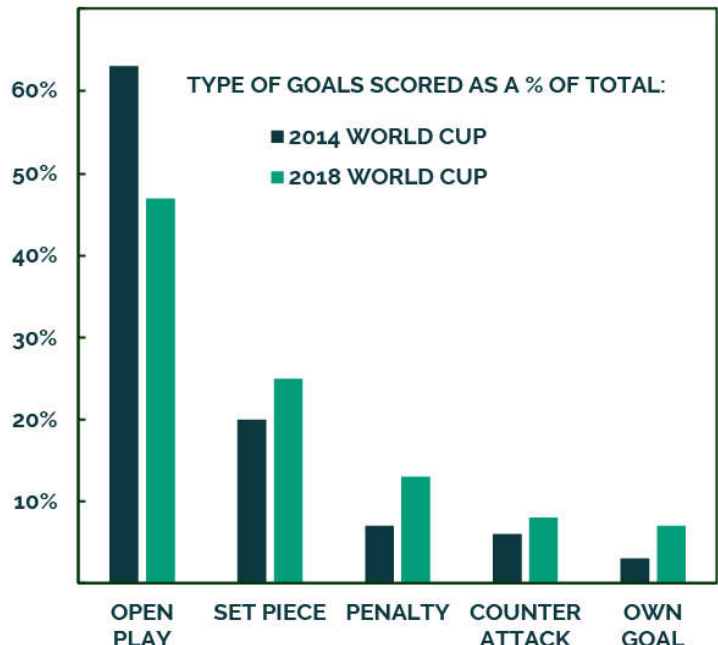
exceptional fitness, speed, discipline, and tactical awareness. It is also disastrous if performed incorrectly, as defenders need to play very high up the pitch, exposing the pressing team to counter attacks. Thus, national teams, who play and practice much less often than professional clubs, had historically been reticent to employ this strategy.

That is until the 2018 edition in Russia. One of the biggest surprises during the last World Cup was the extent to which even small teams employed counter-pressing successfully. Teams like Iran, Morocco, Iceland, and Mexico, which in the past would have sat back in their own half and let superior teams pass the ball around, were instead pressing like finely tuned European clubs. Meanwhile, teams like Germany, which relied on well-crafted passes and possession from their midfielders, crumbled under this defensive intensity.

[After the group stages, we flagged this risk to our model in our World Cup update.](#) The data was clear: Counter-pressing was making it extremely difficult for teams to pass and keep the ball. As a result, the percentage of goals scored from open play declined from 63% to 47% (**Chart 4**).

Chart 4

Implications Of Counter-Pressing



SPAIN (2010) GERMANY (2014) FRANCE (2018)

SOURCE: [WHOSCORED.COM](https://www.whoscored.com)

Our intuition turned out to be correct. Spain, our model's pick to win the competition, was bounced out in the round of 16 by the host, Russia. Overall, Spain had a mediocre showing, winning only one game in the competition,¹⁹ even though it achieved an astonishing 74.8% possession and over 800 passes completed per game, by far the highest numbers in the competition.

Meanwhile, the eventual winner, France, won with a completely different approach from the champions of the recent World Cups. While both Spain in 2010 and Germany in 2014 dominated the ball with 64% and 60% possession, respectively, France had *less* ball possession than their opponents on average (**Chart 4**, panel 2). Passing statistics showed a similar story: Both Spain and Germany completed over 600 passes per game in their championship runs. France completed just over 400 (**Chart 4**, bottom panel).

This style of play was the perfect antidote to the high pressure pressing. Unable to build up play through their midfield, France scored goals through lightening quick counterattacks, long passes, and set piece efficiency.

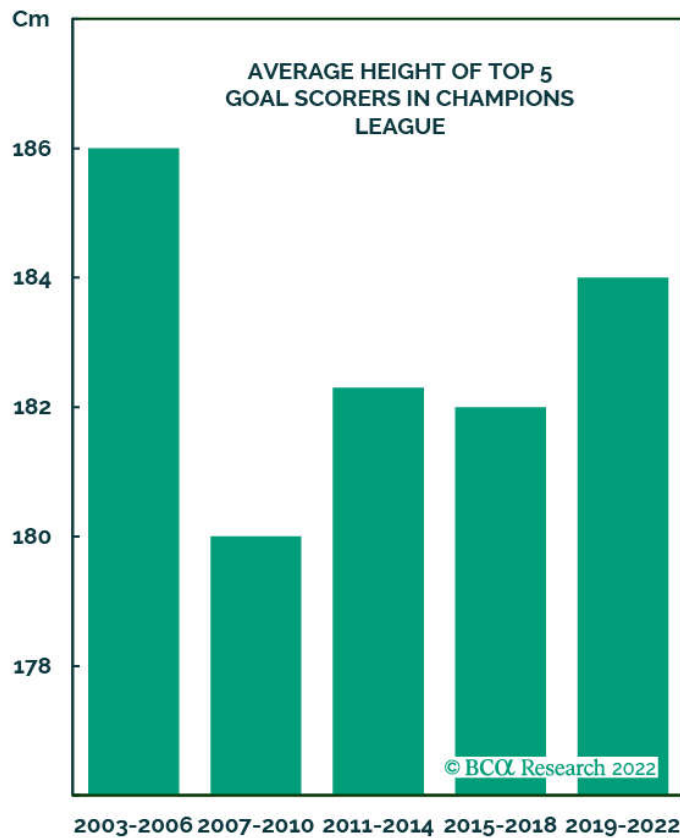
What does this mean for our model? Until not that long ago, the conventional wisdom was that possession teams had rendered traditional strikers irrelevant. However, with the diminished effectiveness of possession play, strikers become crucial to team success (for a more detailed discussion on how different tactics have changed positional importance, please see **Box 3**). As a result, in this edition of our World Cup model, we switch from midfielder rating to forward rating as the most important positional variable in the knockout stages.

Box 3

The Return Of “The Big 9”

Chart 5

The Return Of “The Big 9”



In 2008, Pep Guardiola took helm of FC Barcelona, introducing a new style of play called Tiki-Taka. *Tiki-Taka* is characterized by short passing, movement through channels, and above all, maintaining possession.

Under Guardiola, Barcelona became the most dominant club of the modern era. In 2009, the team became the first to win the sextuple, essentially sweeping every competition they participated in. In 2011, legendary Manchester United coach Alex Ferguson called Barcelona “the best team he had ever faced”, after his team was utterly dominated by the Catalan club in the Champions League final. *Tiki-Taka* also achieved extraordinary success at the national team level, helping Spain win the 2008 Euro, 2010 World Cup, and 2012 Euro.

Tiki-Taka had a pronounced effect in the type of player that was valuable. Big, lumbering forwards were replaced by quick and technical midfielders. Spain famously played with lineups with no forwards whatsoever, instead relying on six midfielders to control the tempo and create attacking chances.

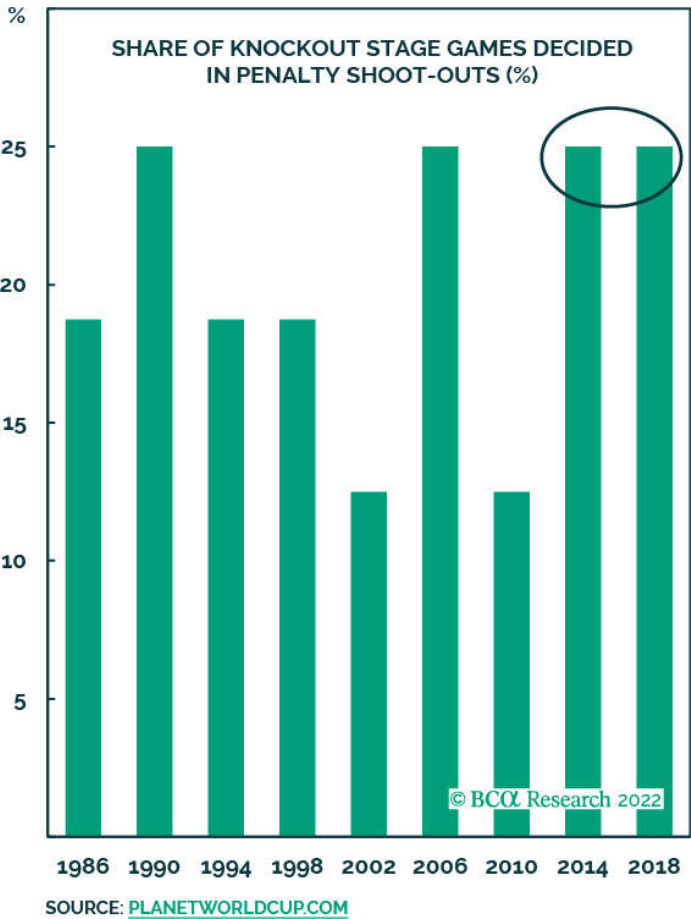
But teams adapt, and eventually they discovered that through intense pressing, possession play could be broken up. As a result, the “Big number 9” has made a comeback and is necessary to

capitalize on long balls and set pieces, which become more important sources of goals when teams cannot build up through passing. This is apparent in the height of the top goal scorers in the Champions League, which has increased steadily following a period of sharp decline brought about by the revolutionary tactics of Guardiola (**Chart 5**).

Much like in the group stages, Forward Average Age is one of the best predictive variables of success. However, in the knockout stage the sign of the coefficient changes: Older forwards become more valuable than younger ones.

Intuitively this makes sense. Games in the knock out stages are usually tighter and have much more pressure. Young, inexperienced forwards can get nervous when they are overwhelmed by such high stakes. Experienced attackers know how to stay calm and capitalize on the little chances available at this stage of the competition.

Chart 6
Penalty Shoot-Out In Knockout Stages



Another important factor is that a large percentage of games are

decided by penalties in the knockout stages (**Chart 6**). This favors teams with seasoned front lines that can keep their cool in high-pressure situations.

As with the group stage model, the final probabilities for the knockout stage games were derived from the average of two models in order to maximize the information contained in the forward player rating variable

Therefore, our final probability is:

$$\Pr(y_i = \text{win} \mid x_i, \beta) = E(\alpha M1, (1 - \alpha)M2)$$

Where:

Model 1 (M1) = f(Team Average Player Rating, Club Level Synergy, Forward Average Age) and,

Model 2 (M2) =f(Forward Average Rating, Club Level Synergy, Forward Average Age),

and α and $(1 - \alpha)$ are the weights given to each model.[20](#)

Table 9 summarizes the descriptive statistics of each team according to the variables used to model their performance.

Table 9
Descriptive Statistics: Knockout Stage Models Explanatory Variables

TEAMS	AVERAGE PLAYER RATING	FORWARD AVERAGE AGE	SYNERGY	FORWARD AVERAGE RATING
Argentina	82.3	29.4	34	86.8
Belgium	80.9	26.7	52	79.3
Brazil	83.9	26.2	76	84.6
Croatia	78.7	26.5	18	80.0
Denmark	76.3	26.7	22	73.3
England	83.9	25.0	166	85.8
France	85.3	29.3	52	89.0
Germany	83.9	26.0	256	83.0
Mexico	76.7	27.0	46	79.7
Netherlands	81.5	24.7	58	81.0
Portugal	84.0	27.5	58	85.5
Senegal	77.3	25.4	22	78.6
Spain	82.8	25.0	148	81.0
Switzerland	76.4	23.5	52	72.5
Uruguay	79.9	29.3	22	81.5
USA	75.5	23.7	22	75.7

Table 10
Round Of 16 Summary Results

Team	Probability Of Winning	Conditional Probability of Passing To The Next Stage	Opponent
Portugal	95%	89%	Switzerland
England	85%	81%	Senegal
Netherlands	83%	72%	USA
Germany	69%	58%	Belgium
Spain	67%	59%	Croatia
Brazil	64%	56%	Uruguay
Mexico	63%	42%	Denmark
Argentina	58%	49%	France
France*	42%	31%	Argentina
Denmark	37%	31%	Mexico
Uruguay	36%	25%	Brazil
Croatia	33%	17%	Spain
Belgium	31%	21%	Germany
USA	17%	13%	Netherlands
Senegal	15%	10%	England
Switzerland	5%	3%	Portugal

* WINNER'S CURSE HAIRCUT OF 28%.

This round of 16 will offer few surprises (**Table 10**). The one game to watch will be between Argentina and France. The epic matchup between Lionel Messi and Kylian Mbappé, the two PSG superstars, will capture the attention of football fans around the world. Not to mention the latest *Ballon D’Or* winner Karim Benzema.

This is a tough game to call. The relatively high winning probability that our model assigns to Argentina is entirely driven by our Winner’s Curse Dummy. While we ended up settling for the same Winners Curse penalty that France had for the group stage, there is an argument to be made that such a haircut is too big, particularly for the knockout stages. Given the high uncertainty around the true magnitude of the Winner’s Curse in the knockout stages, we believe this game could go either way.

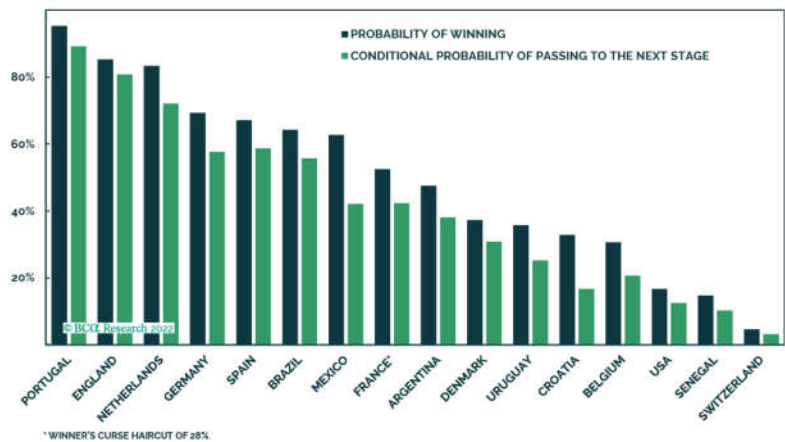
Ultimately our new dummy could make or break the accuracy of our forecast. According to our calculations, **France would win this game against Argentina even if the penalty was as large as 17%, and in fact, Les Bleus would go on to win the competition if the Winner’s Curse Dummy was only half of its current**

magnitude – a testament to the extraordinary talent of the French team.

Still, we think Argentina should be favored in this game.²¹ The French team has been marred by an alarming number of injuries and absences. While the team boasts some of the best attackers in the world, Paul Pogba, N’Golo Kanté, and Blaise Matuidi – the three key players in France’s midfield during the last World Cup – have either lost their form (Pogba), suffered injuries (Kanté), or are playing out their retirement in Florida (Matuidi). France also comes into the competition having won only one out of their last six games, the same record that Germany had before their 2018 debacle.

The second tightest game of this round is Mexico vs. Denmark (**Chart 7**). After failing to reach the quarterfinals in their last seven appearances, *El Tri* is expected to finally reach the next stage, denying Denmark a chance to continue on their fairy-tale run. Frankly, we were surprised by the outcome the model is predicting of this game and we can already see ourselves in 2026 reminiscing about how we underestimated this Danish team.

Chart 7
Round Of 16 Probabilities



In an all-South American game, football legends Brazil and Uruguay will face against each other. These storied teams have won a combined 7 FIFA World Cups and 24 *Copa Américas*. Brazil holds the upper hand in the history of *El Clásico del Río Negro*. Our model gives the team led by Neymar Jr comfortable yet not overwhelming odds of winning, at 64%. Marquinhos and Thiago Silva, the two Brazilian central backs, better keep both eyes on Edinson Cavani and Luis Suarez. They scored 8 of the 11 goals for Uruguay in its last two World Cup participations and they will no doubt fight tooth and nail in what is likely to be their last

appearance in the competition.

Spain versus Croatia and Germany versus Belgium will be two games to watch out for as well. The 2010 and 2014 World Cup champions are favored to win with roughly the same odds. This will likely be the last hurrah of 2018 World Cup Golden Ball and 2018 *Ballon d’Or* winner Luka Modric. Unfortunately for Croatia, the young Spanish team will prove too much for the 37-year-old to handle. Meanwhile, *Die Mannschaft* will remind the Belgian *Red Devils* that their Golden Generation should really consider retiring – something the Germans learned the hard way in 2018. Our model likely overestimates Belgium because of Eden Hazard’s very high ratings despite coming into the competition much out of shape. [22](#)

Portugal, England, and the Netherlands are expected to proceed to the next stage of the competition with relative ease, each having more than an 80% chance of winning their games against Switzerland, Senegal, and the US, respectively. These three teams have the highest conditional probabilities of moving on to the next stage.

Table 11
Quarterfinals Summary Results

TEAM	PROBABILITY OF WINNING	CONDITIONAL PROBABILITY OF PASSING TO THE NEXT STAGE	OPPONENT
ENGLAND	82%	66%	MEXICO
ARGENTINA	74%	24%	NETHERLANDS
BRAZIL	63%	35%	SPAIN
PORTUGAL	56%	50%	GERMANY
GERMANY	44%	26%	PORTUGAL
SPAIN	37%	22%	BRAZIL
NETHERLANDS	21%	19%	ARGENTINA
MEXICO	18%	8%	ENGLAND

Making it into the quarterfinals of the World Cup is an extraordinary feat reserved for only eight footballing nations. At this point, teams have played four intense and decisive games over three weeks and fatigue sets in (**Table 11**).

The Oranje Vs. *The Albiceleste* square up in the first quarter-final match. They are both highly skilled and well experienced World Cup teams that should put on a masterclass game. Our model favors Messi and his countrymen as the victors. However, the Dutch will not go down without a fight. Recent games between these two teams have been very close. In their last World Cup game – the 2014 World Cup Semifinals – they went the distance, with Argentina eventually winning in a nail-biting penalty shootout. Both teams have undergone a new cycle, and currently only Messi, de Vrij, Depay, and Louis van Gaal are still present from eight years ago.

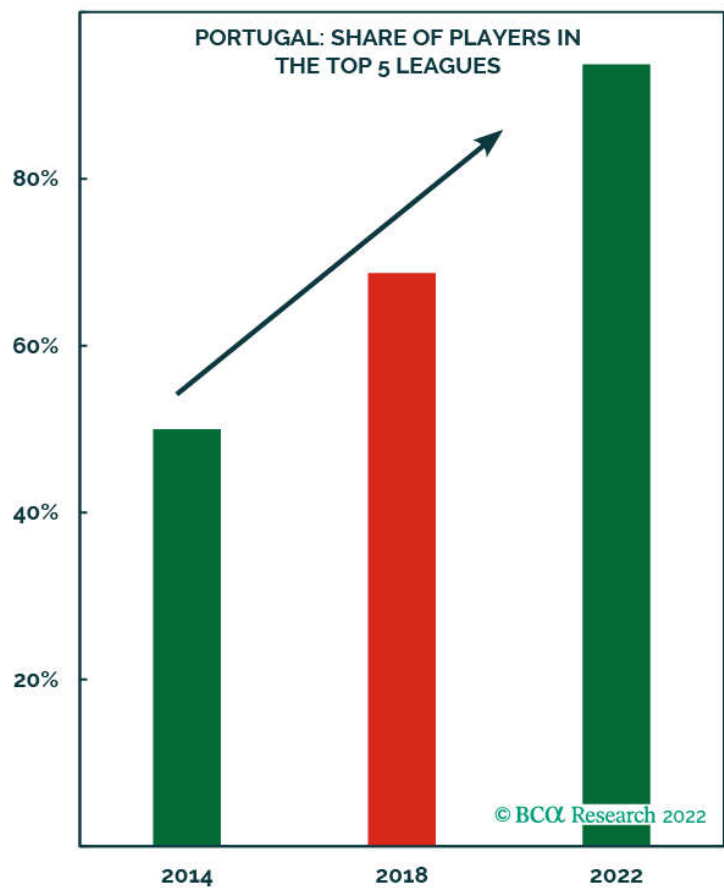
The game opposing Spain and Brazil will be the highlight of the quarterfinal stage for a number of reasons. It will be the first time they meet in a World Cup since 1986, when Spain lost. In fact, the head-to-head track record of *La Furia Roja* against *La Seleç o* speaks for itself: Spain has never won against Brazil. As football fans, we are left wondering what would have happened if the two teams had met on the pitch in 2010, when Spain was at its apex. The Spaniards did get close to achieving a historic victory in the Olympics in Yokohama in 2021, but as we argued earlier, higher possession of the ball is no longer enough, especially when facing the quality of Brazil's forwards. Our model gives Brazil a 63% probability of winning this game.

The *Three Lions* get lucky drawing the least-threatening opponent of the quarterfinal stage. Mexico last made it to this round 36 years ago, and our model has the team as the clear underdog. Of the nine matchups between these sides, England won six, including an 8-0 victory at Wembley in 1961, still the biggest loss in *El Tri*'s history. Our goal model suggests that England could once again win in emphatic fashion, given that it outperforms *El Tri* in every aspect of the game. If all goes to plan, the *Three Lions* should comfortably move on to the semifinals where they will face much tougher opposition.

Our model predicts that Portugal will win by the narrowest of margins, with a 56% probability of winning.

Chart 8

Portugal Is More Experienced Now



The last two times these two teams met did not end well for the Portuguese who conceded four goals in each game (in 2021 and 2014). However, the 2016 Euro champions are a more experienced and talented team this time around (**Chart 8**). Even though our model does not consider the average rating of midfielders, it is worth highlighting how impressive the Portuguese midfield is, with players such as Bernardo Silva, Bruno Fernandes, or even the newest PSG midfielder Vitinha.

In the meantime, *Die Mannschaft* has failed to impress in recent games (it lost to Hungary 1-0 earlier in September) and is still in the process of rebuilding. The Germans will also be more worn out than their opponents, after having to deal with Belgium and Spain in their previous games. This fatigue could be fatal for the German defense, which will have to deal with both Diogo Jota and Cristiano Ronaldo. *Viel Glück!*

Two European and South American sides will face each other in what promises to be hard fought battles to get to the final. Our model predicts that both games will be tight (**Table 12**).

Table 12
Semifinals Summary Results

TEAM	PROBABILITY OF WINNING	CONDITIONAL PROBABILITY OF PASSING TO THE NEXT STAGE	OPPONENT
PORTUGAL	56%	23%	ENGLAND
ARGENTINA	55%	13%	BRAZIL
BRAZIL	45%	16%	ARGENTINA
ENGLAND	44%	32%	PORTUGAL

The *Superclasico de las Americas* is arguably the biggest rivalry between national football teams. After playing more than 100 games against each other, Brazil holds the upper hand by a razor-thin edge, with 43 wins versus Argentina’s 40 wins. These two World Cup giants have reached the final 12 times and, combined, have won seven out of 21 World Cups. Brazil and Argentina have also featured some of the best players of all time: From old-school legends like Pelé and Diego Maradona, to current superstars like Neymar Jr and Messi, who now play together at Paris Saint-Germain.

Table 13
Argentina vs. Brazil: Expected Goals

		BRAZIL EXPECTED GOALS				
		0	1	2	3	4
ARGENTINA EXPECTED GOALS	0	20%	14%	5%	1%	0%
	1	18%	13%	5%	1%	0%
	2	8%	6%	2%	0%	0%
	3	2%	2%	1%	0%	0%
	4	1%	0%	0%	0%	0%

In a tight game, our model gives Argentina a 55% chance of winning. It also predicts a low scoring game with the most likely outcomes a 0-0 or a 1-0 victory for Argentina, similar to the *Copa América* final in 2021 (**Table 13**). The low odds of seeing Brazil scoring even two goals (5%) might be surprising, considering the

offensive prowess of their front line which includes Neymar Jr, Vinicius, and Antony. However, the well-organized Argentinian defense, which has allowed only four goals in their last 20 games, should prove resilient.

Table 14
England vs. Portugal: Expected Goals

		PORTUGAL EXPECTED GOALS				
		0	1	2	3	4
ENGLAND EXPECTED GOALS	0	9%	12%	8%	3%	1%
	1	10%	13%	9%	4%	1%
	2	5%	7%	5%	2%	1%
	3	2%	3%	2%	1%	0%
	4	1%	1%	0%	0%	0%

The second game features two illustrious European sides that have not had much success in past World Cups. England has only won the Cup once – at home in Wembley and with the help of a ghost goal²³ – while Portugal has never reached the final. Our model predicts that Portugal will finally break through, giving them a 56% chance of advancing. Considering the attacking talent of these teams, which include players like Harry Kane and Cristiano Ronaldo, it is no surprise that our model gives a high likelihood for both teams to score (**Table 14**).

After last year’s loss in the Euro final, England will not be going into penalties with a lot of confidence. Their World Cup history is not any more encouraging: They have won only one out of four penalty shoot-outs. In fact, the last time they met at the World Cup (2006), Portugal beat England in penalties.

As our foreword argued, football is no different. The mechanics of the sport make it nearly impossible for one singular talented individual to be enough to change the outcome of a tournament. Competition is also incredibly fierce, making it hard for one player to stand too far above all others. According to soccerprime.com, there are 275 million people who play football actively. Out of them,

under 130,000 manage to play professionally. And from these, just over a thousand are consistent starters for teams in the world's top 5 leagues. To truly stand out at football's biggest stage, you can't just be great, you need to be extraordinary – a combination of athleticism, hard work, and sheer talent that most people can't even fathom. Few players have what it takes to be truly dominant over the course of a game; even less for the duration of a tournament; just a handful in history for more than a season. As a result, football has always been about the macro – the system that a team uses being more important to success than the flashes of brilliance from individual star players.

But what if there was not one exception to the rule but two? Two athletes who could single-handedly change the destiny of their nations.

During their illustrious careers, Lionel Messi and Cristiano Ronaldo have shown that no theory of what is possible on a football pitch applies to them. They have broken every single record there is to break, outscoring the third most prolific goal scorer – Robert Lewandowski - by over 140 goals over the last 15 seasons, while also creating goals for their teams with assists (**Chart 9**). Between them, they have won 12 out of the last 14 seasons *Ballon D'Or*, breaking the record of three *Ballon D'Or* that Johan Cruyff had set almost 50 years ago (**Chart 10**). All this talent has translated to silverware, with their teams winning a combined 46 trophies. Today, they are universally acknowledged as part of the Mount Rushmore of Football, alongside Pele and Diego Maradona. Many will even argue that they have surpassed the legends of yore, and now stand as the two undisputed best athletes to ever kick a ball.

Chart 9

Dominating Football For 15 years

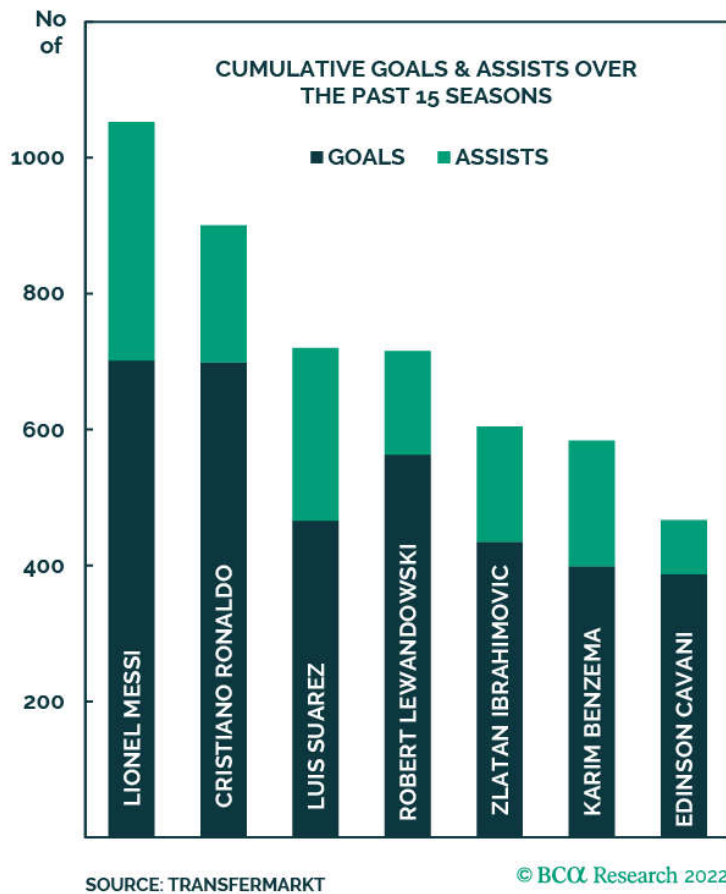
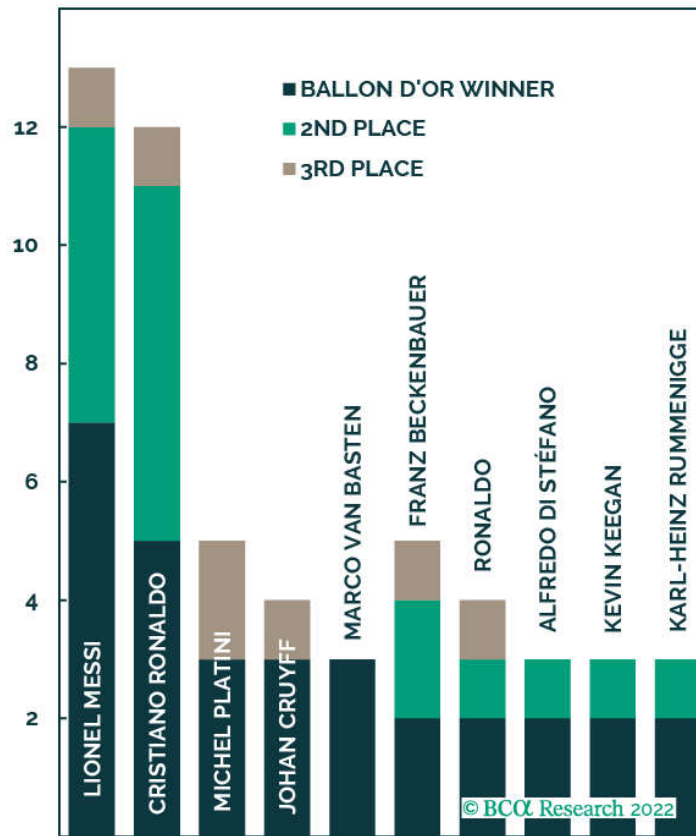


Chart 10
The Greatest Of All Time



Despite their brilliance, neither has won a World Cup. Given that both athletes are in their late-30s, this will likely be their last chance. In this edition of the tournament, both players will come determined to make history, coached by excellent managers, and surrounded by some of the best teams they have ever played with. Our analysis suggests that this will be enough for these titans of the game to carry their respective nations to football's pinnacle: **BCA's Two-Step World Cup model predicts that, on December 18, 2022, the world will watch a final between Argentina and Portugal.** A duel to finally decide who is the Greatest of All Time between Lionel Messi and Cristiano Ronaldo (**Diagram 1**).

Diagram 1
Road To Glory

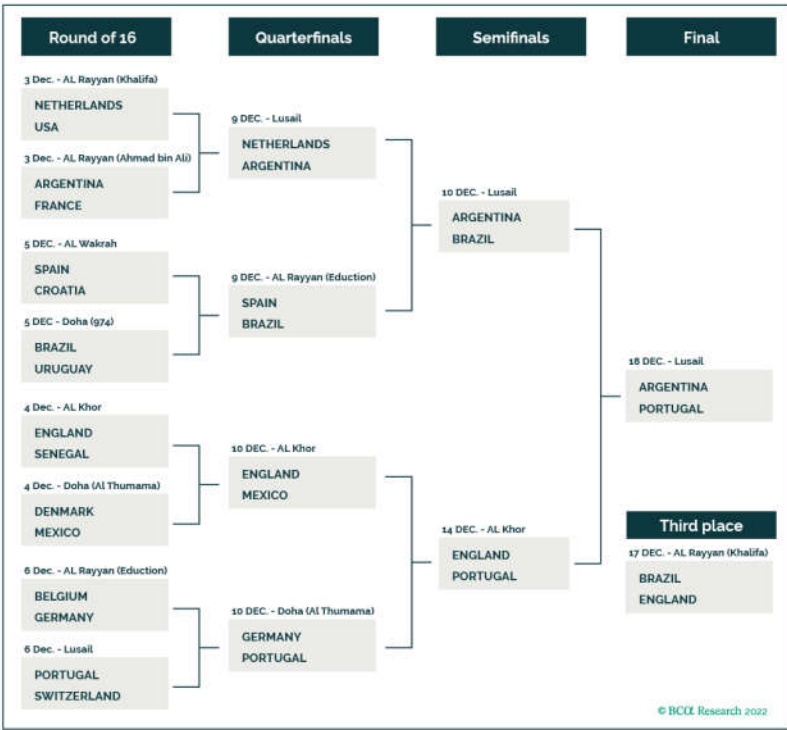


Table 15
A Statistical Tie

TEAM	PROBABILITY OF WINNING
PORTUGAL	50%
ARGENTINA	50%

Who will prevail in this epic battle? As football fans we are faced with an impossible decision. Choosing between Messi and Ronaldo is like choosing between Mozart and Beethoven or between Da Vinci and Michelangelo – it is less a matter of objective analysis and more a matter of tastes. Relying on cold numerical logic and hard data is no better. Our model puts these two teams in a statistical tie, giving both nation a 50% probability to win (Table 15).

Table 16
Argentina vs. Portugal: Expected Goals

		PORTUGAL EXPECTED GOALS				
		0	1	2	3	4
ARGENTINA EXPECTED GOALS	0	17%	15%	6%	2%	0%
	1	16%	13%	6%	2%	0%
	2	7%	6%	3%	1%	0%
	3	2%	2%	1%	0%	0%
	4	1%	0%	0%	0%	0%

After much deliberation, **we believe that when all is said and done, Argentina and Lionel Messi will be the ones to lift the 2022 FIFA World Cup in Qatar.** In a game where there is a high probability that the winner will be decided in a penalty shoot-out (**Table 16**), Argentina has the historical advantage in both experience and success rate. The *Albiceleste* got to the penalty shoot-out five times in past World Cups and won four of them with a 77% success rate at scoring goals. Portugal won its game against England in the 2006 World Cup in the penalty shoot-out, scoring three goals out of five attempts (60% success rate). Additionally, Argentina comes into this World Cup as the much hotter team, going without a loss since July 2019. Messi is also in better form than his Portuguese counterpart, scoring nine goals and delivering ten assists in 15 games so far this season.

How confident are we about our choice for winner? While we are happy with our pick, Argentina will face many close games throughout the knockout stage, with the final being essentially a coin-toss. Thus, their probability to win the cup stands at only 7%, even as favorites. Moreover, as Simon Kuper and Stefan Szymanski, authors of New York Times best seller *Soccernomics*, explain in **Box 4** on page 46, even careful quantitative analysis can lead to the wrong prediction – something investors and economists around the world know too well.

Box 4

Discussion By Soccernomics Authors

Every few years since we first published *Soccernomics* in 2009, the two of us rewrite and update the whole book. We’ve just done it again ahead of the World Cup in Qatar. Cynics might accuse us of

taking out wrong predictions and putting in new ones. But there's one prediction we made that was so wrong that it pushed us to rethink how global soccer works. Briefly: why hasn't the rest of the world caught up with western Europe?

In 2009, we looked at the crazy dominance of western European nations at the 2006 World Cup, and thought: this can't last. A region with about 5 per cent of the world's population cannot keep dominating the global game. Countries elsewhere would simply copy and overtake the western Europeans, we thought. So we subtitled that first edition, "Why the US, Japan, Australia, Turkey—and Even Iraq—Are Destined to Become the Kings of the World's Most Popular Sport."

Go on, laugh at us. Thirteen years later, none of these countries looks king-like. To the contrary: heading into this World Cup, Western Europe is unprecedentedly dominant. Since 2006, its teams have won four straight World Cups, something no continent had managed before. Two of those trophies were won outside Europe, something no European team had managed before. Better, continental Europeans (including Croatia, a bike ride from western Europe) hogged eleven of the twelve first, second and third places at World Cups in this period. Also, notice the region's depth: seven different European countries have reached the top three.

What makes western Europe unbeatable in soccer? Quite simply: ideas exchange within the continent. This region has the world's most porous borders. The French, Germans, English, Dutch, etc. each think just a little differently about soccer, and they swap ideas almost daily. Often this happens through matchplay: after Italy beat England, or Villareal beat Bayern Munich, the losers go home and work out what the winners did better.

Often the ideas are carried by individuals: players or coaches who migrate between European leagues, like Liverpool's German coach Jürgen Klopp, Manchester City's Catalan coach Pep Guardiola, or Real Madrid's Italian Carlo Ancelotti.

And so western European soccer evolves almost weekly. The best teams play ever faster, more organized soccer, with new winning tactics, such as Italian and German forward pressing.

Even the biggest national teams outside Europe are excluded from this ideas exchange. The US, say, cannot learn the world's best soccer playing qualifying games against Panama or Costa Rica. Its teenagers won't learn it in high schools or soccer academies

separated by thousands of miles from leading European teams. By the time the best North American, Asian or African players arrive in Europe, aged about 20, they're often too late to catch up.

Longer term, the dominance of a single region still looks unsustainable. But then we called catchup once before, and we were wrong. All that we'll now say is that it will happen one day, but we're no longer specifying which century.

Simon Kuper and Stefan Szymanski are the authors of the New York Times best seller Soccernomics, a must-read for all football fans worthy of the name. At BCA Research, we are looking forward to getting our hands on the 2022 World Cup edition of Soccernomics!

What about the third place game? Our model predicts an interesting game between Brazil and England, who will be free from the pressure of the competition and could gift fans with a very attacking game. The last time the two sides met in a World Cup, twenty years ago in the quarterfinals in South Korea, England failed to beat a *Seleção* which was down one player for more than 30 minutes.

Table 17
Match For Third Place

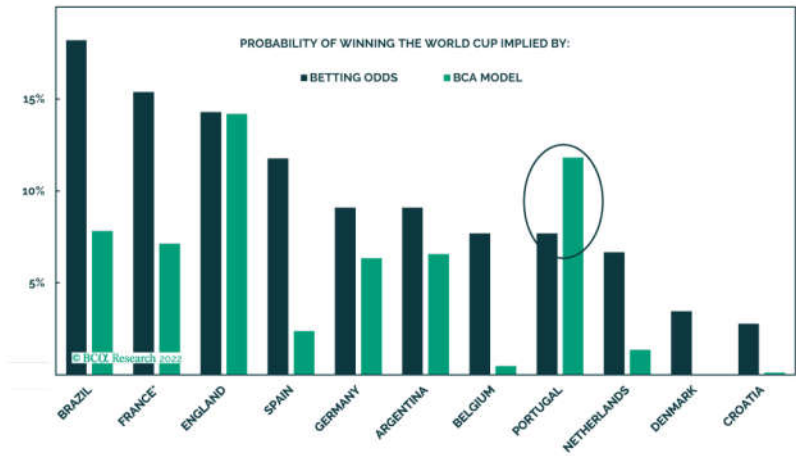
TEAM	PROBABILITY OF WINNING
BRAZIL	51%
ENGLAND	49%

Like the final, this game is expected to be a coin-toss, with a slight advantage for Brazil (**Table 17**). Doing better than in 2014 when they lost 3-0 to the Dutch (right after being humiliated by Germany) will certainly remind them to not overlook this game.

Finally, while we think that Portugal will eventually lose in the final to Argentina, they could still be an attractive bet, given that they have an easier path to the final. According to our model, the current odds are underestimating the chance of an Iberian champion

(Chart 11). However, as we said in our 2018 World Cup report:
BCA does not recommend betting in sports!

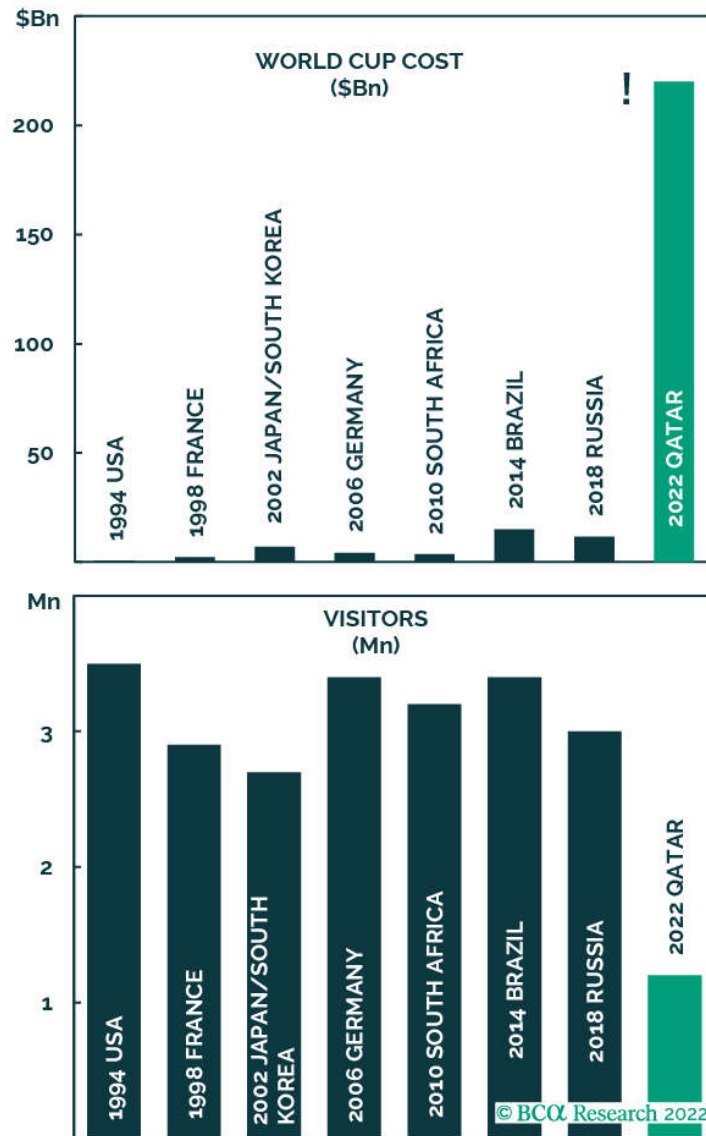
Chart 11
BCA FIFA World Cup Model vs. Consensus



The World Cup is not just about winning. It is the most watched event - sporting or non-sporting - in the world because it weaves so many narratives and themes together. In this section, we explore some of these narratives and themes. Some are investment relevant; some are geopolitically relevant.

Our qualitative assessments are ordered from the lowest-ranked teams to the highest-ranked, no favorites.

Chart 12
Highest Costs, Lowest Attendance



Qatar has spared no resource in preparing for this World Cup, spending a record \$200 billion (**Chart 12**, top panel). The Gulf nation has built six new stadiums, all equipped with air conditioning, necessary for players to last an entire game in the desert heat. Over 30,000 migrants have come into the country to build the new infrastructure.

Much like previous World Cup hosts, Qatar has three objectives in holding the world's premier football event. First, it seeks to put the country on the map, with the hope that this attention can increase the country's soft power. Second, it looks to increase FDI into the country, in a bid to boost economic growth. Third, it looks to promote its tourism industry, a key objective of Qatari officials, given that 60% of the country's GDP comes from energy.

Unfortunately for the Gulf nation, none of these objectives are likely

to be met. Global attention has only brought negative issues to the limelight, such as poor working conditions for migrants as well as environmental concerns over Qatar's new infrastructure. Qatar's winning bid for hosting the World Cup has also been marred by controversy. In 2020, the US Department of Justice claimed that FIFA's top officials had been bribed into voting for Russia and Qatar. Another investigation into bribery and money laundering a few years later, led to the resignation of former FIFA president Sepp Blatter.

The track record for economic growth and FDI following a World Cup is also poor. [Several studies](#) have shown that the infrastructure costs of hosting a World Cup far outweigh the benefits. Moreover, succeeding in a World Cup bid tends to be the ultimate lagging indicator – merely a reflection that the country has achieved a certain level of geopolitical and economic influence.

Finally, there is a chance that the 1.2 million visitors expected by Qatar do not materialize because of all the controversies. Western visitors might also be dissuaded by local cultural norms. Alcohol, for example, will only be able available for sale and consumption in designated areas *after* the games. Overall, despite being the most expensive World Cup on record, it will also be the one with the least attendance since 1990 (**Chart 12**, bottom panel).

How then should Qatar reach its objectives? While the Gulf nation has received nothing but criticism from its handling of the World Cup, several Western leaders have travelled to Qatar in recent months, looking to secure oil and gas deals to soften the blow of the energy crisis. In the end, Qatar would be better served using its energy resources rather than the World Cup to wield influence. Ultimately, natural gas is better leverage than a World Cup.

In 1998, Iran and the US played their first ever match in a World Cup. The game resulted in a 2-1 win for the Iranians, the first ever victory for Iran in the competition.

In terms of football, the match proved meaningless, as both teams were eliminated from the group. However, the event proved to be a great example of how geopolitical tensions seep into football and how the sport can at least temporarily provide a space for diplomacy and compromise.

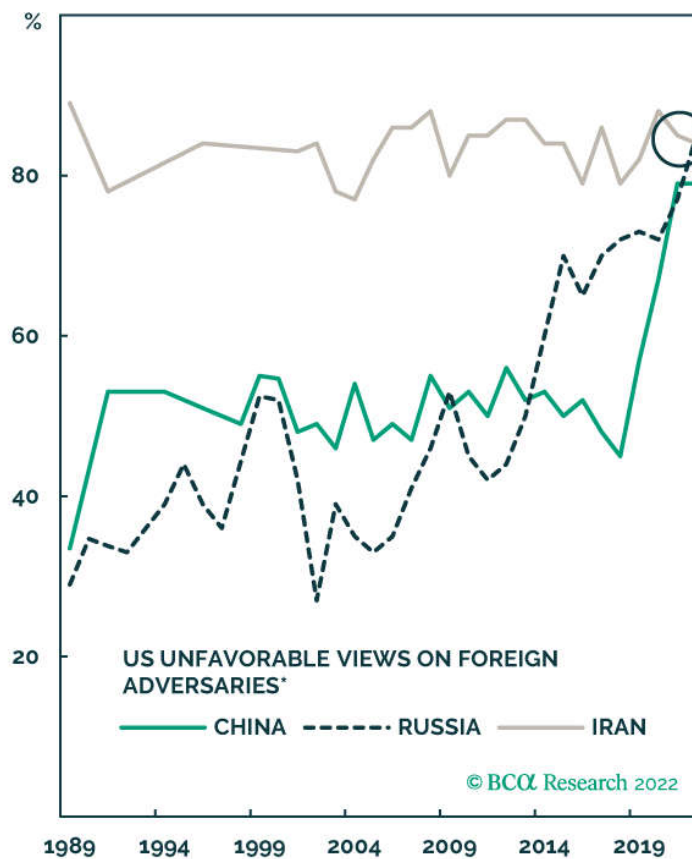
The game was billed as “the most politically charged game in football history”. Tensions began to flare before kickoff: FIFA regulations state that players in teams categorized as “Team B”

have to walk up to "Team A" players and shake their hands in the middle of the pitch. However, Supreme Leader Khamenei had given express orders that the Iranian team, "Team B" in this match, were not to walk up to the Americans. Eventually a compromise was reached, and the US broke FIFA protocol, walking up to the Iranian team to shake hands. In exchange, the Iranian team handed white flowers to the American players – a symbol of peace. The teams took their pre-game picture together, in what many described as one of the greatest acts of *rapprochement* between the two nations since the 1979 Iranian Revolution.

On November 29th, these two teams will play each other for the second time in a World Cup. President Biden will certainly hope that a repeat of 1998 can once again pull the two nations closer together, at a time when both countries remain at odds in their nuclear negotiations. After all, a renewed deal would alleviate some of the pressures in the oil market, increasing the Democrats' chances of retaining the White House in 2024.

Chart 13

US Political Constraint



Still, several constraints make the deal unlikely. The US cannot

provide credible long-term security guarantees to the Iranian regime. Because of extreme political polarization and generally unfavorable views of Iran in the US, a renewed nuclear agreement with Iran could be undone by the next administration (**Chart 13**). Iran may also find that achieving nuclear capabilities is a more sustainable solution than any temporary diplomacy agreement. The examples of Ukraine, Libya, and North Korea show that treaties do not bring the security of a nuclear weapon. Ukraine gave up its Soviet nuclear weapons after the 1994 Budapest Memorandum, which promised that Russia, the US, the UK, France, and China would guarantee its security. Yet Russia ended up invading 20 years later – and none of the aforementioned nations prevented it or sent troops to halt the Russian advance. Separately, Libya gave up its nuclear program in 2003 but NATO attacked and toppled the regime in 2011 regardless. Meanwhile, North Korea played the diplomatic game with the US, ever inching along on the path toward nuclear weapons, and today has achieved nuclear-armed status and greater regime security. Iran's gambit is to follow the path of North Korea and rush to achieve nuclear capabilities which would act as a permanent deterrence to a Western attack.

It remains unlikely that 2022 will offer the same opportunity for diplomacy as 1998 did. However, what is clear is that once again political developments have made their way onto the football pitch. During a friendly game with Senegal in September, Iranian players covered up their national symbols to show their support against the repression of women in Iran. The influential Iran forward Sardar Azmoun has been particularly vocal about it, willing to risk being banned from the national team. The recent protests, the most significant in Iran since 2009, should provide an interesting wrinkle in the eve of the match between these two geopolitical rivals.

The Canadian national soccer team is beaming with confidence, playing an exciting brand of football that has helped them qualify for the World Cup for the second time in history. Better known for its hockey prowess, the northern nation has never been able achieve much in men's football.^{[24](#)} During its sole World Cup appearance in 1986, it lost all three games without netting a single goal.

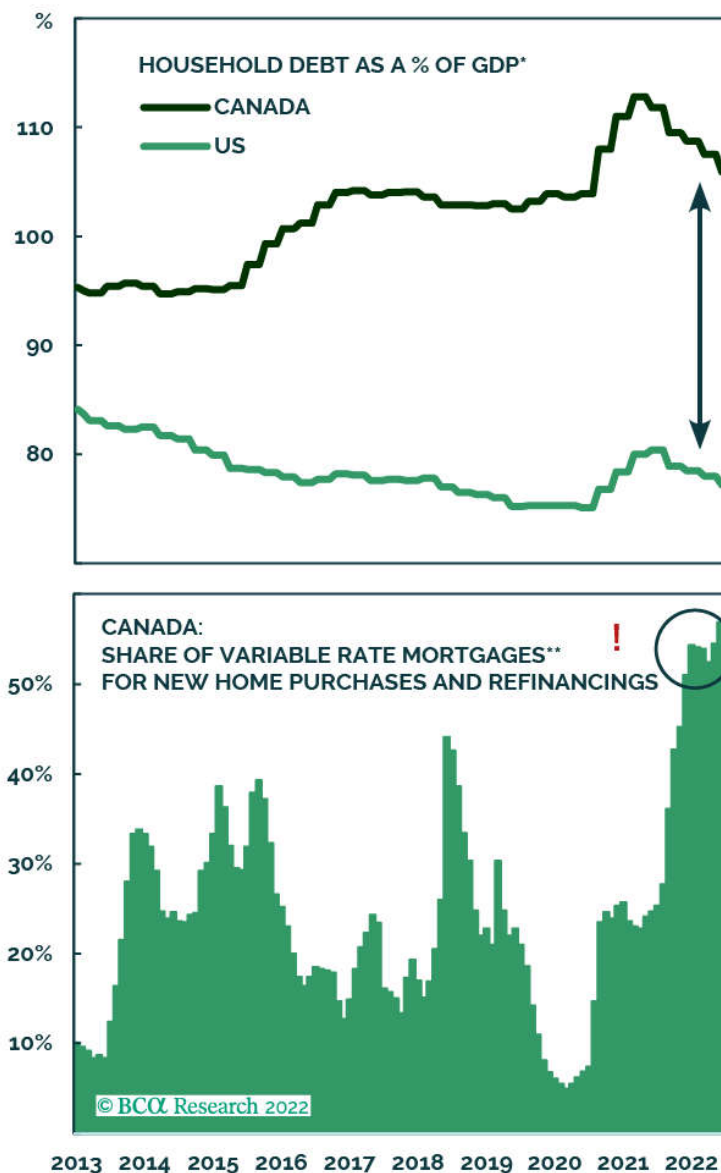
Despite its poor track record, Canadians are hopeful that the national team will be able to make it out of their group this time. There are reasons to be optimistic: Bayern Munich's Alphonso Davies became the first Canadian to win the men's UEFA Champions League in 2020. At only 22 of age, he is considered

one of the best left backs on the planet. Jonathan David recently became the most expensive Canadian football transfer in history, after his 30 million euro signing from Gent to French club Lille OSC. He has lived up to his price tag, netting an impressive 39 goals in 105 appearances since he began playing in the French Ligue 1 and boasting the best goal/appearance ratio in the history of the Canadian national team.

But is the talent of these two young players enough to send Canada to the round of 16? Unlikely. Much like its housing market, Canada's national team will crumble once seriously tested.

Chart 14

Canadians Will Feel The Pain Of Rising Rates



* SOURCE: BANK FOR INTERNATIONAL SETTLEMENTS.

**SOURCE: RESIDENTIAL MORTGAGE INDUSTRY REPORT AND STATISTICS CANADA.

Since the 1990s, the Canadian housing market has seemed unshakable. In recent years in particular, Canada's home prices were as hot as its national team; prices climbed by 29% from 2019 to 2021.^{[25](#)} However, the recent surge in interest rates has begun to expose the fragility of Canadian housing. In contrast to its southern neighbor, household indebtedness continued climbing after the Great Financial Crisis (GFC), making Canada one of the most expensive real estate markets among advanced economies (**Chart 14**, top panel). With mortgage rates now above 5%, these large debt levels have started to become extremely burdensome for Canadian households, given that variable rate mortgages account for half of all new mortgages and refinancing (**Chart 14**, bottom panel).

The 12-year highs in interest rates is starting to prove difficult to handle for Canadian housing. At the national level, house prices are down 2% since June. In some of the cities with the bigger real estate bubbles such as Toronto, the damage is even worse, with price declines of over 4%.

Likewise, Group F should prove too tall a test for the talented but unproven Canadian national team. Over the last 10 years, Canada has not managed to win against weak European teams such as Iceland, Slovenia, or Scotland. In November they will face two of the best football teams according to FIFA: Belgium (2nd) and Croatia (12th). Our model shows that while it will put up a better fight than in 1986, Canada will ultimately fall short of qualification. At BCA, we will be cheering for our home-based team to upset our model – hoping that Canada's football team can withstand a challenge better than its housing market.

Reigning World Cup champion France enters the competition hoping to achieve what only Italy and Brazil have managed to do in the past: Win two World Cups in a row.^{[26](#)} On paper, the French squad is not only very impressive, but has also gotten better, with the return - at *last* - of the best #9 in the world and recent *Ballon d'Or* winner, Karim Benzema, and the additions of the talented youngsters Aurélien Tchouaméni and Jules Koundé.

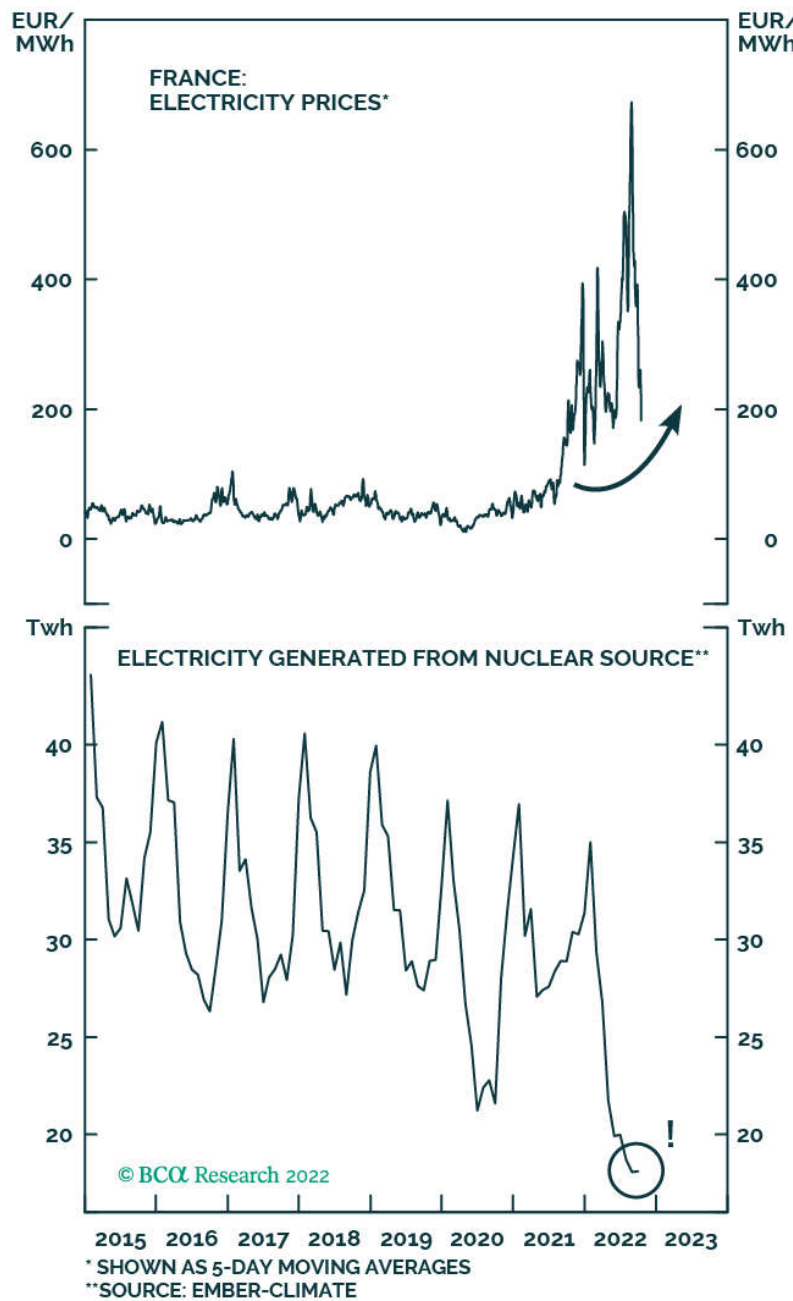
However, the shadow of the Winner's Curse looms large over Didier Deschamps' team. So far, France has left many football fans wondering how a squad filled with so much talent is failing to produce a more memorable type of football. Since their crowning, *Les Bleus* have disappointed, failing to live up to their status of

World Cup winners. Their performance at the last Euro Cup against Switzerland (losing in penalty kicks after leading 3-1) and the debacle at the Nations League in June and September may be signs that *Les Bleus* need a change of leadership.

For France, the trajectory of its national team mirrors that of its President, Emmanuel Macron. The French team unexpectedly won the World Cup in 2018, one year after Macron was elected, also unexpectedly. Much like *Les Bleus* during the last tournament, Macron showed great promise: A young, charismatic leader, eager to reform the French economy and serve as the new face of a politically united and strong European Union.

Chart 15

France Is Operating Below Capacity



And yet, this last year has shown that, much like in sports, success in politics tends to be short-lived. For the French President, the honeymoon phase has ended. The EU is currently in disarray, battered by an energy crisis. At home, he has seen his mandate weakened. While Macron secured a second term, beating his opponent Marine Le Pen, his party failed to obtain an absolute major-ity in the National Assembly. To advance his economic agenda, which includes the controversial pension reform, Macron now must compromise with other parties.

France and Macron could certainly do with another World Cup title. Sentiment is pessimistic. The energy crisis, which sent electricity

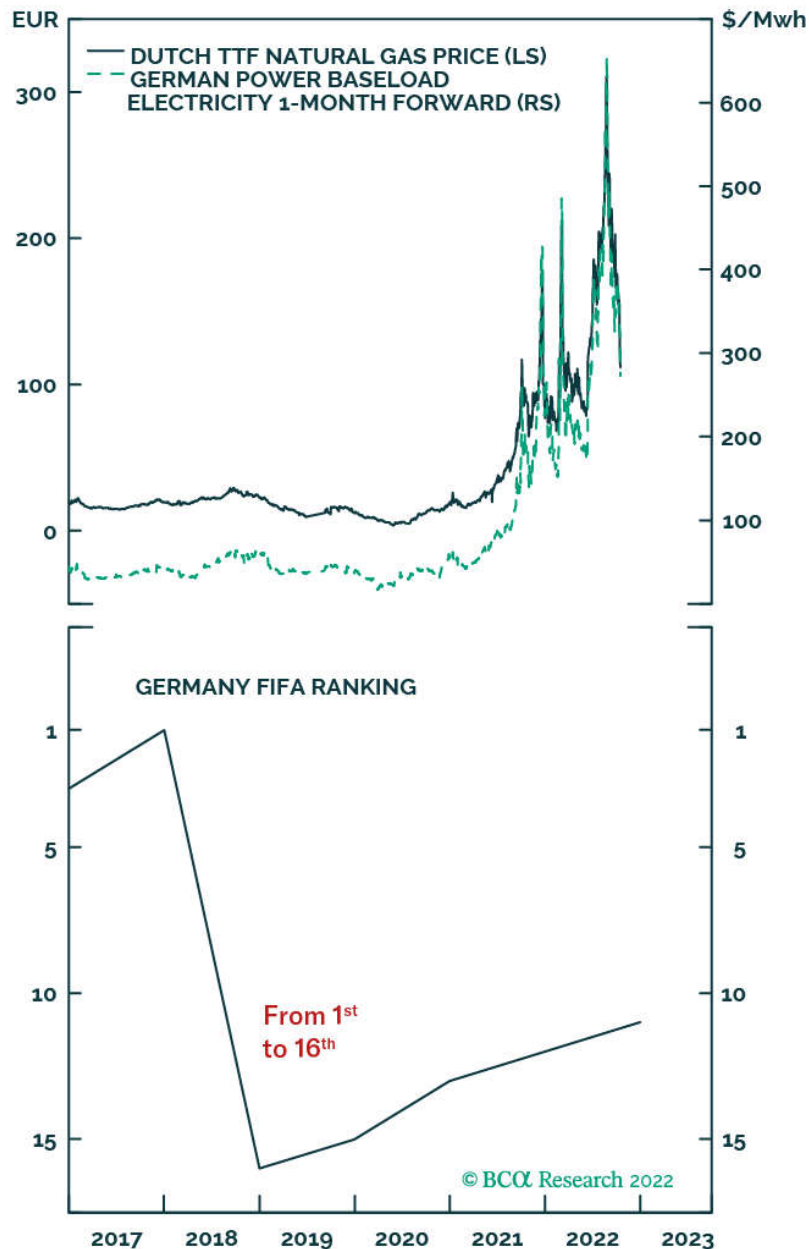
prices skyrocketing, has been painful for French consumers (**Chart 15**, top panel). Even worse is that French nuclear electricity production has been running far below full capacity, just like *Les Bleus* (**Chart 15**, bottom panel). A win would go a long way in reviving animal spirits in the nation. More importantly, a new title would place France on top of world football, a position befitting the role envisioned by Macron for France within European and global geopolitics. Perhaps there is still hope for both Macron and *Les Bleus* to recapture the magic that made them formidable forces, upset our model, and set France on its former path to global leadership.

2021 marked the end of an era for Germany. Chancellor Angela Merkel and national team coach Joachim Löw, arguably the two most influential individuals in the country, stepped down from their positions, after 16 years and 15 years in charge, respectively.

Both have left a big legacy – similar in many ways. Merkel successfully steered Germany and the Eurozone through the European sovereign debt crisis, the refugee crisis, and the Covid-19 pandemic. Meanwhile, Löw revived the national team and revolutionized German football, implementing a dynamic attacking style that helped the team win its 4th World Cup in 2014.

Chart 16

Germany Misled By Former Leaders



However, their final decisions while in office have tarnished their reputations. While Merkel retired as the most popular politician in the country, her policies of abandoning nuclear energy and increasing German dependency on Russian gas have sunk the country into a historic energy crisis (**Chart 16**). Similarly, Löw ended his tenure with a disastrous group stage exit at the 2018 World Cup. Unable to rebuild the squad, he left the national team a shell of its former self, with Germany ranked only 16th in the world, according to FIFA, at the time of his departure (**Chart 16**, bottom panel).

Today, German politics and German football are in the process of rebuilding, both under new leaderships.

Newly appointed coach Hansi Flick is aiming for a deep run at this year's World Cup. Flick coached German club Bayern Munich to a Champions League title in 2020 and was also an assistant coach for the German national team that won the World Cup in 2014. German fans will be hoping that his championship pedigree and his familiarity with the core of the team (most national team players play for Bayern Munich), can help Germany achieve a record-tying fifth World Cup title. So far, it seems that there is still a lot of work to be done: Germany has won only one of its last seven competitive games leading to the World Cup.

Germany's new political leadership is facing an even rockier start. The new government consists of a coalition between chancellor Scholz's Social Democrats, the Green party, and the Free Democrats. The energy crisis has been front and center, putting the Green party in a difficult spot. The Greens have been the biggest advocates of the energy transition and have opposed Russia. But the party was founded out of the anti-nuclear movement and has been pushing to shut down coal and nuclear plants as soon as possible.

Even with flows of Russian gas completely gone, the leader of the Greens - Vice Chancellor Habeck - has decided to continue shutting down the remaining nuclear power plants in Germany. This policy is becoming increasingly untenable, forcing Germany to rely on expensive LNG imports and revive emission-heavy coal plants.

Beyond this winter, Germany's long-term energy security remains in jeopardy. The current import of LNG at spot market prices is unsustainable and will need to be replaced with long-term contracts at lower prices. Qatar has developed into a major LNG exporter and is an ideal trade partner for Germany. A visit by Habeck in March paved the way for a new energy partnership between the two countries that was officially signed in May.

But a concrete contract for gas deliveries has still not been signed. In any case, LNG deliveries would only be expected in 2024 at the earliest, since Qatar has already committed the majority of its gas in contracts to Asian countries and Germany currently does not have LNG terminals to receive gas. Qatar is also looking for long-term contracts of 20+ years, which Germany is reluctant to sign due to their ambitious goals to reduce carbon emissions.

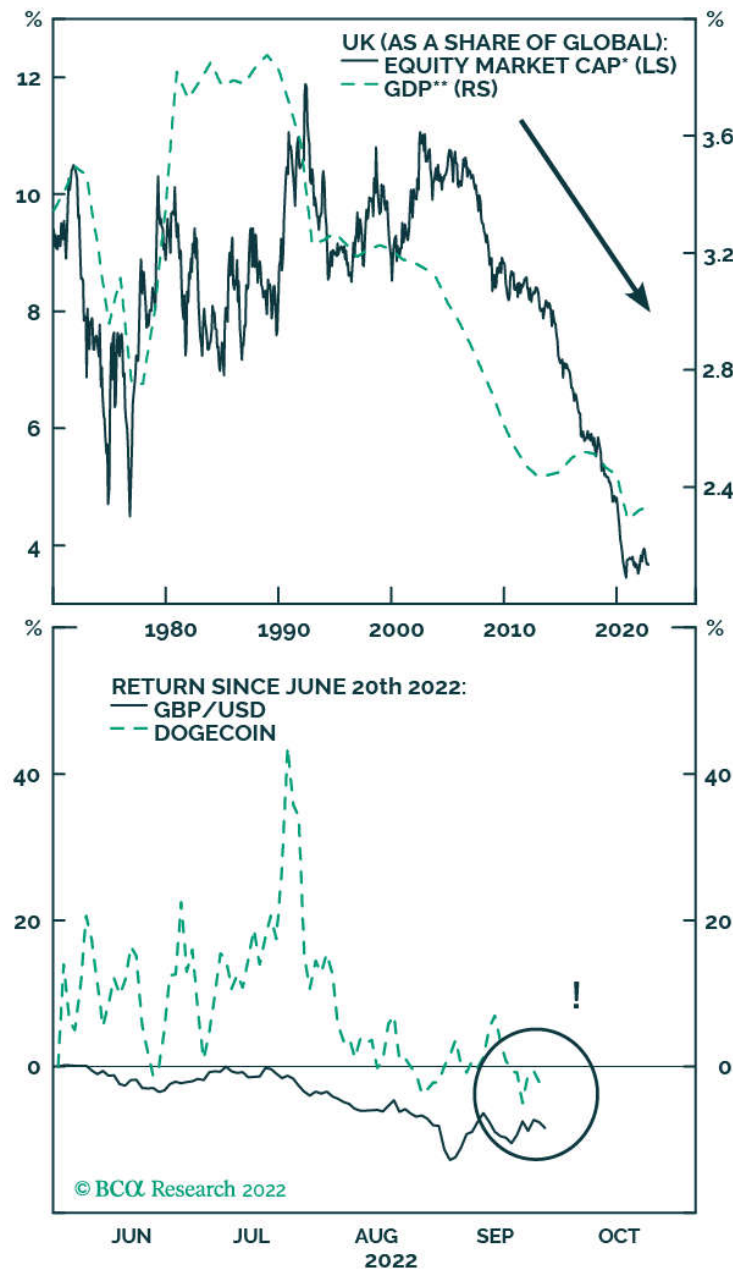
In its current predicament, bringing home a World Cup title and new gas supplies from Qatar would be a huge success for the new

German leaders. It would also lift German spirits tremendously, in what is likely going to be a harsh winter.

England is coming to the World Cup as one of the tournament favorites, according to many analysts and bookmakers. The most valuable squad of the tournament is packed with top-class talent in each position and many players are at the peak of their careers. After blowing a 1-0 lead against Croatia in the semifinal at the last World Cup and a heartbreaking penalty loss in the last Euro Cup final on home ground, English fans will hope that this team has finally earned enough big-game experience to put them over the top.

Chart 17

A Shell Of Its Former Glory



* SOURCE: MSCI Inc. (SEE COPYRIGHT DECLARATION).
**SOURCE: IMF

A disappointing exit from this year's tournament would be another blow to the nation at a time when sentiment is already at record lows. The UK has been hit by ceaseless waves of bad news this year: the highest inflation rate in the G7, bleak growth prospects, financial market instability, political turmoil, a record trade deficit, ongoing labor strikes, energy shortages, as well as the nagging fallout from Brexit across the economy. The collapse in the pound has added insult to injury: The once mighty empire, the cradle of capitalism and the industrial revolution, has seen its currency underperform internet dog money over the last few months (**Chart 17**).

The downfall of the UK in the global arena resembles that of the English national team. Creators of modern football and a dominant international force in the first half of the 20th century, the *Three Lions* have been relegated to becoming a second-rate team over the last sixty years. The nation's only trophy, the 1966 World Cup, remains the sole vestige of accomplishment that English fans can cling to. Despite fielding great squads over the decades since then, the team has chronically underperformed on the global stage. Pundits blame players' lack of exposure to foreign leagues, low-level tactics, and even a curse. Whatever the reason, England's long trophy drought keeps getting longer in every competition that it plays in.

Back in Westminster Palace, Tories are sure to cheer for England through the tournament. A World Cup triumph would salve the nation's gloomy mood at least temporarily, while an early elimination could put the final nail in the coffin of their reelection ambitions. After all, history shows us that the performance of the *Three Lions* can greatly affect voters' sentiment in this football-mad nation. In 1970, Harold Wilson's Labour unexpectedly lost snap elections, just four days after England lost to West Germany in a World Cup quarterfinal, blowing 2-0 lead in the last twenty minutes. If this were to repeat in Qatar, Tories' only hope for political survival would be to face Harry Maguire in the next elections.

Our model predicts that England will once again fall short, losing in a close semifinal game against Portugal. Still, anything could happen in a close game, and considering the talent in Gareth Southgate's squad, it would be unwise to dismiss it altogether. While an economic turnaround remains too ambitious, the 2022 World Cup remains a great chance for England to regain its former glory on the football pitch.

Over the years, BCA has written extensively on how important macro forces have reshaped the world. As the most popular sport on the planet, the Beautiful Game has not been immune to these changes. In this section we look at several macro themes - globalization, nationalism, China's common prosperity, generational change, COVID, and NFTs – through the lens of football.

On April 18, 2021, Florentino Perez, President of Real Madrid, announced the creation of the European Super League (ESL) – a new competition that sought to revamp the structure of European football. The ESL initially received support from 12 of the top clubs in the world as well as a commitment of \$3.2 billion in debt

financing from JP Morgan.

What exactly did Perez propose? The top European football clubs rarely play against each other. This is because most games happen within national leagues, which means that qualification-only international competitions, such as the Champions League, are the only opportunities for clubs like Barcelona and Liverpool to play against each other. Under Perez' proposal, the top 20 clubs in Europe would exit their national leagues and form an international "Super League" where they would play each other every week in a league format.

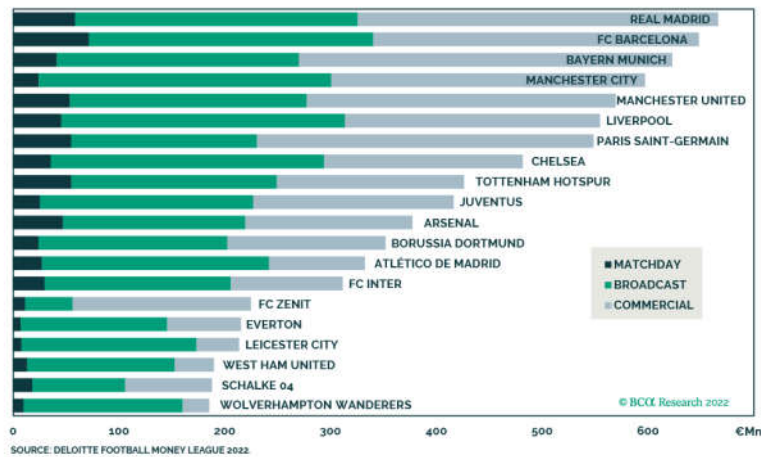
As soon as the Super League was announced, it faced overwhelming pushback. The Spanish, English, and Italian football leagues and federations, as well as UEFA, the top European football governing body, all signed a joint statement vowing to prevent the Super League from going forward, warning that any player that participated would be banned from playing in any domestic or European competition, as well as from representing their national teams in international matches. Eventually, the ESL project failed when several English clubs backed out from the initial agreement.

The creation of the Super League and its subsequent disbandment is a microcosm of one of the dominant geopolitical themes of the past decade: the tug of war between globalization and nationalism. The Super League was designed to capitalize on the extraordinary reach that top clubs have obtained thanks to globalization. Over the past twenty years, the revenues of the top 10 clubs have grown fourfold as their fanbases reached world-wide scale. Clubs such as Manchester United and Real Madrid have over a billion fans, most of whom live in Asia and Africa.

Importantly, these international fans will likely never see a game in person. They will, however, pay plenty of money to watch these teams play on TV and to buy their jerseys. This has altered the composition of club revenues dramatically. Matchday tickets are now a trivial amount of revenues for top's clubs, with most of the money coming from TV rights and commercial deals (**Chart 18**). As far as the accountants of clubs like Real Madrid are concerned, the average *Madridista* no longer lives in Madrid.^{[27](#)}

Chart 18

Average Revenue Generated By Clubs Over Financial Years
2019/20 And 2020/21

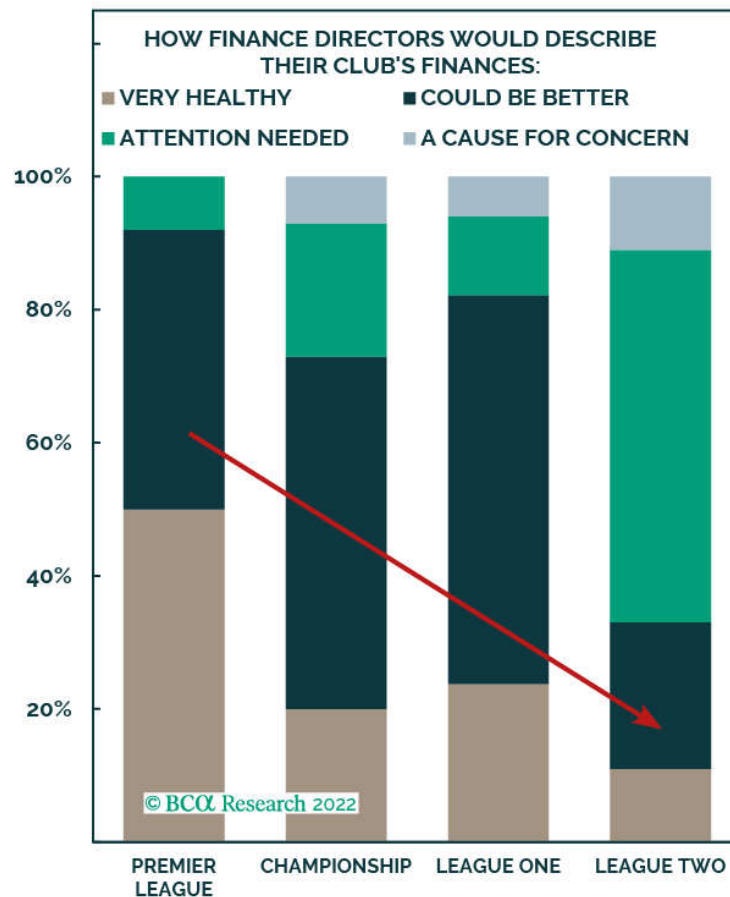


For the top European clubs, the financial implications are clear: It is much more profitable to play amongst elite clubs than to compete in their respective domestic leagues. While a domestic competition carries a lot of significance for local supporters, most international fans care little about it and prefer to see the very best teams play each other, regardless of where they come from.

But if the Super League is such a no-brainer from a business perspective, why was there so much opposition to it?

Chart 19

Small Clubs Are Struggling



SOURCE: BDO RESEARCH, CONSULTANCY.UK ANALYSIS.

Perhaps more than any other sport, football has always been deeply steeped in local history and folklore.²⁸ For many football fans, the Super League was a betrayal of these traditions to satisfy the interests of shareholders. Super League detractors also argued that this competition would create a two-class system in football. National competitions, at least, provide some opportunities for small-town teams to challenge Europe's top clubs. In contrast to the bigger clubs, these smaller teams are barely treading water financially, relying heavily on games with more popular teams for viewership (**Chart 19**). The Super League would essentially snuff out these opportunities, relegating second-tier teams into commercial irrelevance and sinking them into financial ruin. This was particularly worrying for national football federations, given that they also would lose importance, revenue, and power if the Super League was created.

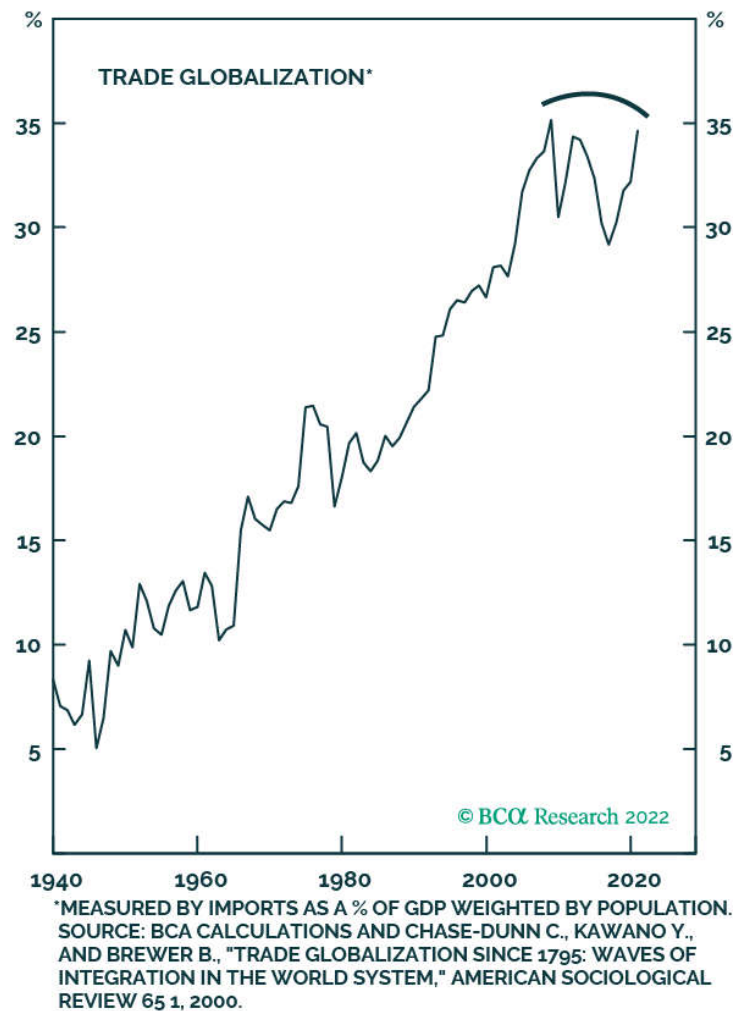
The story is all too similar to the economic and political dynamics that have evolved over of the past decades. Globalization has given rise to a few superstar winners who have attained extraordinary success on a global scale. For many of these winners, success has

come at the expense of their smaller national peers. Still, this process continued because the economic dividends of globalization were enormous, even if it cost manufacturing jobs relocated abroad and undermined national security.

But the world has reached a breaking point. Just as with the Super League, we have begun to see national interests push back. Vladimir Putin, Xi Jinping, Brexit, and the election of Donald Trump represented a revolt against globalization, most strongly felt in some of the areas most affected: The old manufacturing hubs in both Britain and the US. Even today, with Trump no longer in power, President Biden is keen to return some manufacturing capacity to the US, in the name of national security, while Russia and China are decisively breaking with the West.

Chart 20

Globalization Has Peaked



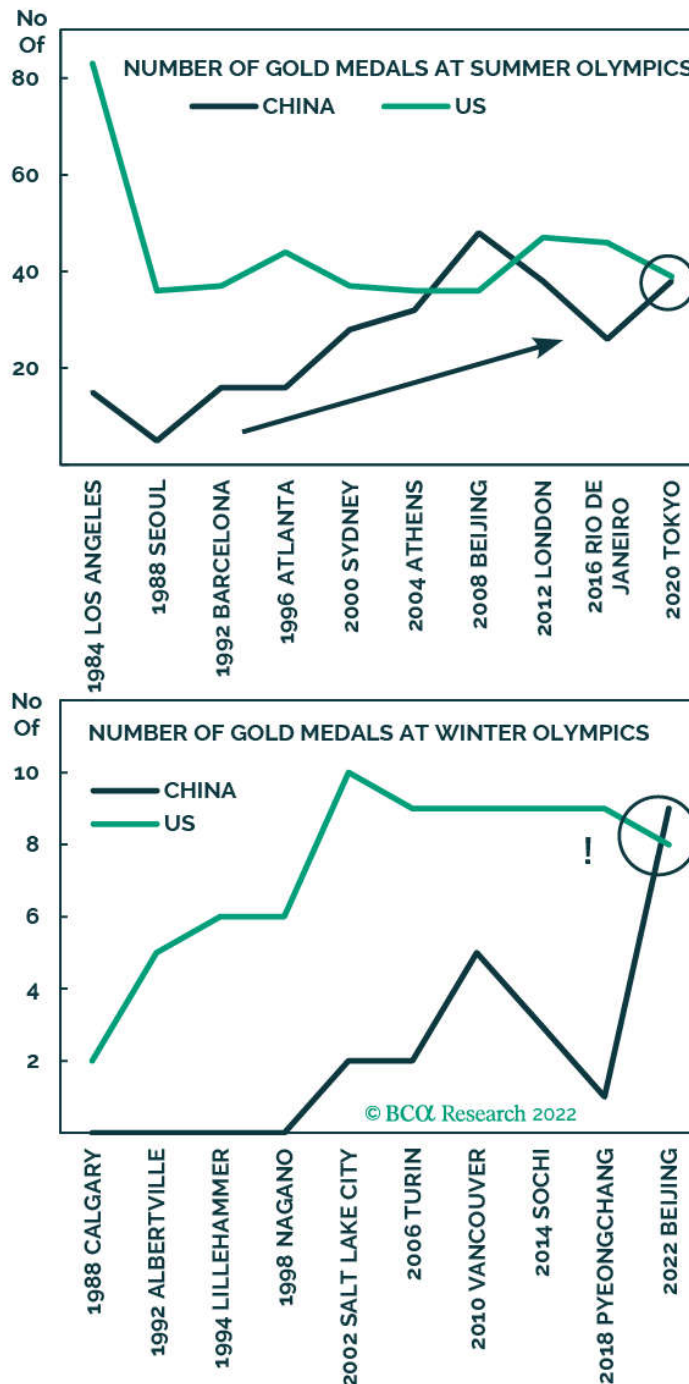
BCA's Geopolitical Strategists have argued that the era of *laissez-faire* globalization has run its course. Instead, we have entered

hypo-globalization, where national interest and priorities seek to reassert themselves, leading to a much slower pace of globalization (**Chart 20**). Just as was the case with the Super League, national institutions will not allow private economic interests from supplanting national objectives.

Does this mean that the Super League will never come back? Not quite. Globalization is only set to slow, not collapse, at least until China invades Taiwan. The economic dividends that globalization has brought are just too great for nations (or football clubs) to ignore completely. Thus, the struggle between globalization and nationalism is one we will experience for years to come. Likewise, the recent attempt to create the Super League will likely not be the last. The financial incentives to create a supra-national football league will only increase going forward. For now, national forces have managed to keep it at bay. Whether they will do so again in the future remains an open question.

Chart 21

Competing For Gold



In modern China, politics and sports are inseparable. In the 50s, Mao pushed for China to develop athletes who could compete against the West in international events to display the country's growing national strength. Today, much like in the geopolitical and economic arenas, China competes head-to-head against the US to top the medals table at the Olympics (**Chart 21**).

China, however, is still a laggard when it comes to football. The East Asian giant is one of the big absentees of this World Cup - eliminated by Vietnam in the AFC qualifiers, even though the Chinese top-tier league went dormant for four months in 2021 so

that the national team could prepare.

The lack of achievement by the Chinese national team is surprising considering the stature of the nation in other sports as well as the fact that President Xi Jinping is a well-known football fan. In 2011, Xi told reporters that he had three dreams for Chinese soccer: to host, qualify, and win the World Cup. While his first objective could materialize over the next decades or so, qualifying for the World Cup – never mind winning it – remains unlikely in the foreseeable future. China is ranked 79th in the world, eight spots below Cabo Verde, a country with a population of half a million people.

Chart 22

Wages Do Not Always Match Quality

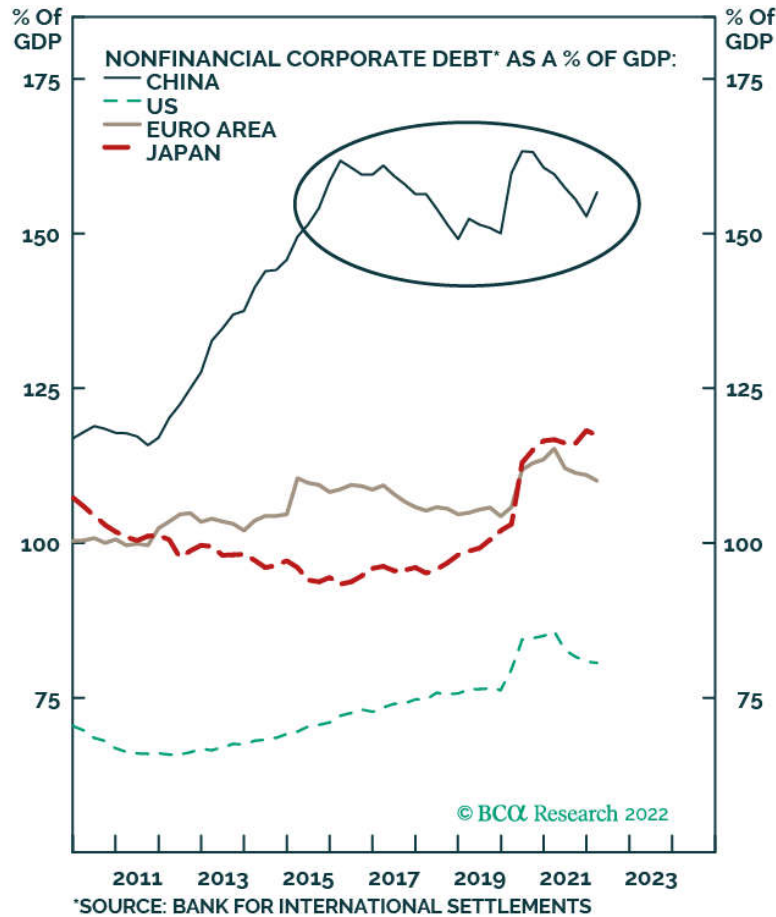


It has not been for lack of trying. In 2016, the National Development and Reform Commission launched a 35-year development plan to make China a football superpower. Incentivized by the Communist Party, the Chinese private sector spent enormous resources trying to make Chinese football as competitive as the European top leagues. Paying lavish sums of money, the Chinese Super League (CSL) teams began to attract foreign coaches and players of international caliber. By 2018, the average salary paid by CSL

teams was just below that of the top 5 leagues in the world (**Chart 22**, top panel). By 2020, the salaries of some CSL stars like Oscar and Bakambu were on par with that of stars in some of the biggest clubs in the world, like Manchester City's Kevin de Bruyne or Robert Lewandowski (**Chart 22**, bottom panel).

Chart 23

Chinese Corporate Debt Problem



However, things have changed over the past few years. President Xi has sought to revamp the investment-led growth model that China has had for the better part of the 21st century. His objective is reasserting state control over the economy, reducing income inequality, and cleaning up the financial excesses that have made China's corporate sector the most indebted on the planet (**Chart 23**).

Football has not been immune to President Xi's "Common Prosperity." In December of 2020, the Chinese Football Association announced new regulations to crack down on exorbitant player salaries and CSL sponsorships. Foreign player salaries in the CSL are now capped at \$3 million under the plan, with domestic players

capped at 5 million yuan (US\$765,000). Clubs can spend no more than 600 million yuan (US\$91.74 million) on total wages, with a cumulative \$10 million on foreign player salaries. In the words of the association, “The policy aims to curb the investment bubbles in our leagues and promote the healthy and sustainable development of professional football.”

Similar measures taken by Chinese policymakers for the corporate sector at large have also had a dramatic impact on the Chinese Super League. Jiangsu F.C., owned by Chinese e-commerce giant Suning, was dissolved three months after becoming the 2020 CSL champions due to financial difficulties. Earlier this year, Chongqing Liang jiang Athletic F.C. was also dissolved because of its financial losses and enormous debt burden. The crackdown on the property sector has been particularly painful for the Chinese league, given that over two-thirds of CSL clubs are owned by real estate conglomerates (**Table 18**). In many cases, debt-strapped clubs have been unable to pay player salaries.

Table 18
The Crackdown On Chinese Real Estate Means Trouble For CSL Clubs

CURRENT CSL CLUBS	OWNER(S)	SECTOR
Beijing Guoan	Sinobo Group (64%) and CITIC Group (36%)	Real Estate
Cangzhou Mighty Lions	Everbright Group	Financial
Changchun Yatai	Changchun Jiarun Investment	Financial / Real Estate
Chengdu Rongcheng	Chengdu Better City Investment Group Co., Ltd.	Real Estate
Dalian Pro	Dalian Wanda Group	Real Estate
Guangzhou	Evergrande (80%) and Alibaba (40%)	Real Estate / Cons. Disc.
Guangzhou City	Guangzhou R&F Properties Co., Ltd.	Real Estate
Hebei FC	China Fortune Land Development Co., Ltd	Real Estate
Henan Songshan Longmen	Henan Haolin Investment	Utilities
Meizhou Hakka		
Shandong Taishan	State Grid Corporation of China	Utilities
Shanghai Shenhua	Greenland Group	Real Estate
Shanghai SIPG	Shanghai International Port Group	Transportation
Shenzhen	Kaisa Group	Real Estate
Tianjin Jinmen Tiger	TEDA Investment Holding Co., Ltd.	Real Estate
Wuhan Yangtze River	Wuhan Zali Development Holding Co. Ltd	Financial
Wuhan Three Towns		
Zhejiang	Zhejiang Energy Group (50%) and Greentown China Holdings Limited (50%)	Utilities / Real Estate

Today, the once bright future of Chinese football is bleak. Many of the best foreign players have left, and even some of the most traditional football clubs in the country are worried about their financial future. For President Xi, the downfall of the CSL is a cautionary tale on how trying to cure the excesses of China's economy could jeopardize his nation's global ambitions.

The American comedy series Ted Lasso follows an American football coach hired to manage A.F.C Richmond, a (fictional) struggling soccer team in the English Premier League. Though

inexperienced, his determination, earnestness, and optimism eventually win over a skeptical fanbase. Ted Lasso has been a commercial and critical hit, winning back-to-back Emmy Awards for Outstanding Comedy Series.

It is also representative of the emerging love story between the US and the Beautiful Game.

For decades, soccer tried to break into the US market with little success. In 1975, The New York Cosmos, a professional club in the now-extinct North American Soccer League, signed Pelé, the most famous footballer at the time. Initially this strategy paid dividends, with the Cosmos filling entire stadiums with people who wanted to see the Brazilian legend. But as soon as Pelé retired in 1977, the Cosmos began to decline, and in 1985, the team was dissolved entirely due to low attendance. Ten years later, the US was still indifferent to the sport. A [1994 poll showed](#) that only 20% of the American public was aware that the World Cup was being played in home soil.

Things have begun to change in recent years. A poll from 2017 showed that soccer was the favorite sport of 7% of the US population, up from just 2% in 2008 (**Chart 24**, top panel). In 2019, the average game attendance for Major League Soccer (MLS) was higher than for NBA and NHL games, attracting over 20,000 people for each match (**Chart 24**, bottom panel). The rise in the sport's popularity is even larger for the women's game. According to data by Nielsen, the US Women's National Team World Cup win in 2019 had 14.3 million viewers in the US, a number which rivaled the NBA finals in that same year.

Where does this sudden appeal come from? While the popularity of professional soccer has been dwarfed by other sports in the US for many decades, youth soccer quietly grew into one of the staples of American suburban life. The result is that today's young parents played soccer in their youth at a much higher rate than their predecessors (**Chart 25**, panel 1). Crucially, they are passing on this passion for the game to their children. For Generation Z, soccer stands shoulder to shoulder with some of the most popular American sports (**Chart 25**, panel 2). For Generation Alpha, soccer is the undisputed number two, barely edged out by American Football. The ethnic makeup of the US population is another tailwind. The Hispanic population, which tends to like soccer at a higher rate than the general population, is set to represent 28% of the US population by 2060 (**Chart 25**, panel 3).

Chart 24
Growing Popularity Of Soccer In The US

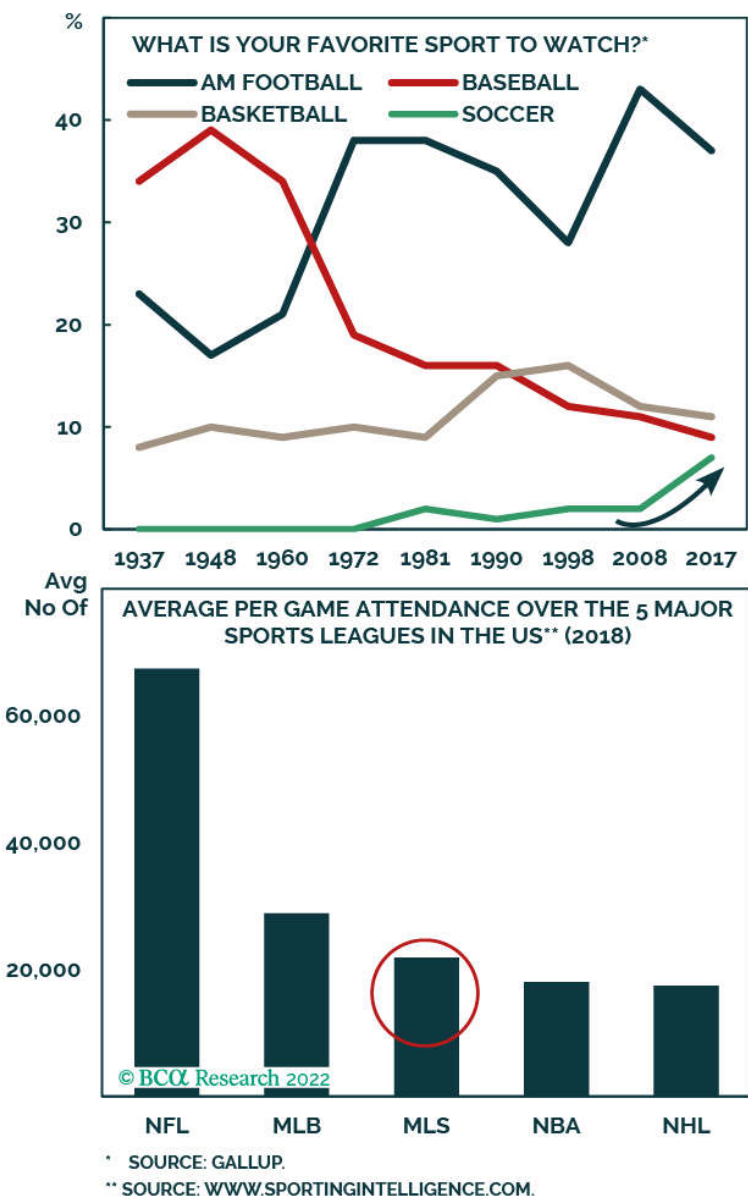
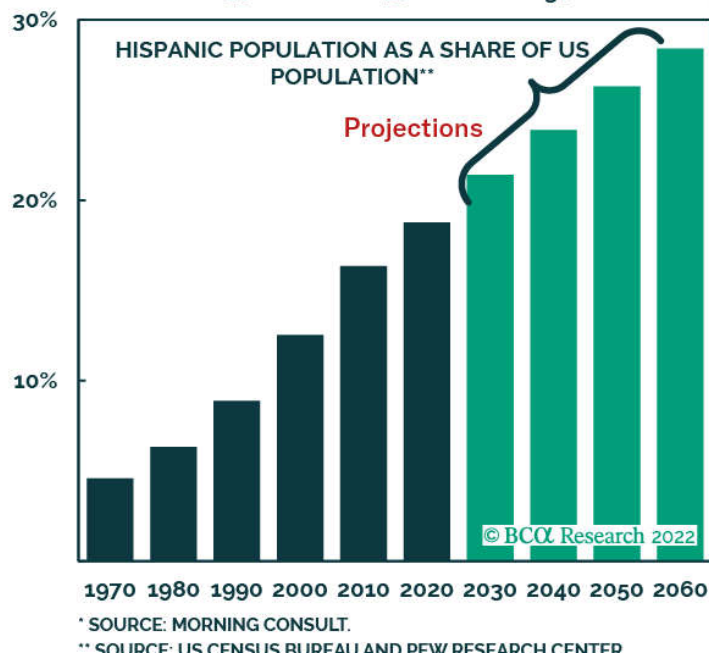
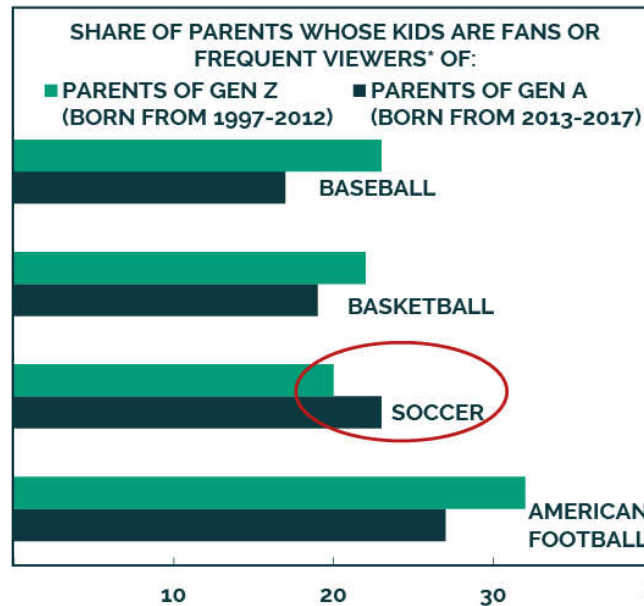
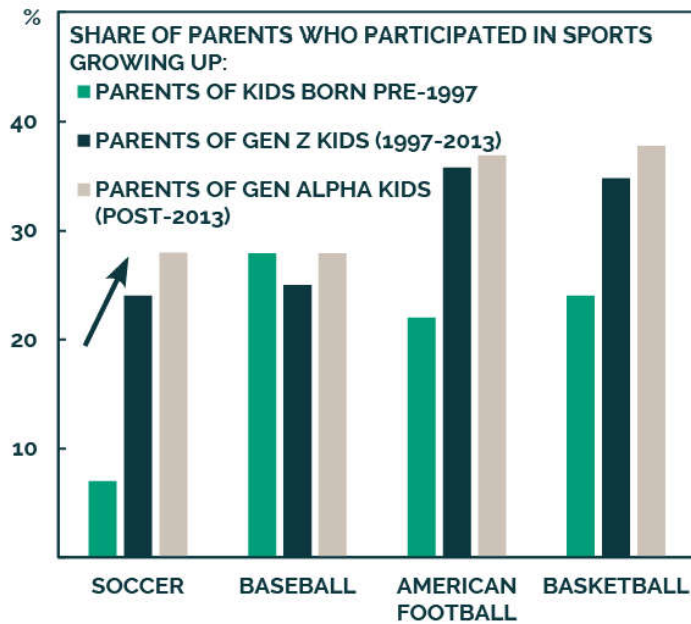


Chart 25
Tailwinds For Soccer In The USA



SOURCE: US CENSUS BUREAU AND FCB RESEARCH CENTER

US businesses are trying to capitalize on this growth. Eleven of the 40 top-tier clubs in England and Italy are under American ownership, and Americans now also own first-division teams in France and Spain (**Table 19**). Expectations are particularly high for the US national league: Three MLS teams are now worth close to a billion dollars each and the average valuation for MLS teams is now richer than in any other sport league (**Chart 26**).

Table 19
American Ownership In Europe

LEAGUE	CLUB	AMERICAN OWNER
ENGLISH PREMIER LEAGUE	Arsenal	Stan Kroenke (also the owner of Los Angeles Rams, Colorado Rapids)
	Aston Villa	Wesley Edens
	Fulham	Shahid Jhan (also the owner of Jacksonville Jaguars)
	Crystal Palace	Josh Harris, David Blitzer and John Textor (also the owner of New Jersey Devils (NHL), Philadelphia 76ers)
	Leeds United	49ers Enterprises (York family) - (also the owner of San Francisco 49ers)
	Liverpool	John Henry & Tom Werner (Fenway Sports Group owns Boston Red Sox, Pittsburgh Penguins), Lebron James
	Manchester United	Glazer family (also the owner of Tampa Bay Buccaneers)
ITALIAN SERIE A	Florentina	Rocco Comisso (also the owner of New York Cosmos)
	AC Milan	RedBird Capital Partners (Investor in Fenway Sports Group)
	AS Roma	Dan Friedkin
	Spezia	Robert Platek
	Inter	Oaktree fund (minority stake)
SPANISH LALIGA	Mallorca	Robert Sarver, Steve Nash, Stu Holden, Kyle Martino (Sarver is also the owner of Phoenix Suns)
FRENCH LIGUE 1	Lyon (OL)	John Textor
	Marseille (OM)	Frank McCourt (former owner of LA Dodgers)
	Toulouse	RedBird Capital Partners (Investor in Fenway Sports Group)
ENGLISH CHAMPIONSHIP	Barnsley	Chien Lee, Paul Conway, Billy Beane
	Coventry City	Joy Seppala
	Burnley	Alan Pace/ALK Capital
	Millwall	John Berylson, Richard Smith
	Swansea City	Stephen Kaplan, Jason Levien
ITALIAN SERIE B	Genoa	777 Partners
	Venezia	Duncan Niederauer
	Parma	Kyle Krause
	Ascoli	Matt Rizzetta, North Six Group
FRENCH LIGUE 2	Caen	Oaktree fund
	Le Havre	Vincent Volpe

There are reasons to believe that this optimism is warranted. Becoming a staple of American sports would be huge for the MLS, since the US sports market is by far the biggest in terms of dollar value. A recent list by Forbes showed that the top 50 sports franchises in the world by value are dominated by American sports teams. The value of all of Europe's soccer giants from the list (Real Madrid, Barcelona, Manchester United, Liverpool, PSG, Bayern Munich, Manchester City, and Chelsea), would barely edge that of sport franchises in the US Mid-West (**Chart 27**).

Chart 26

Rich Valuations

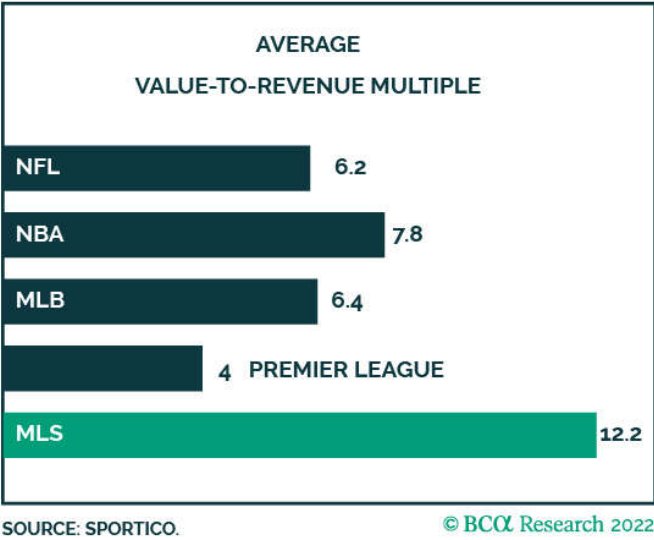
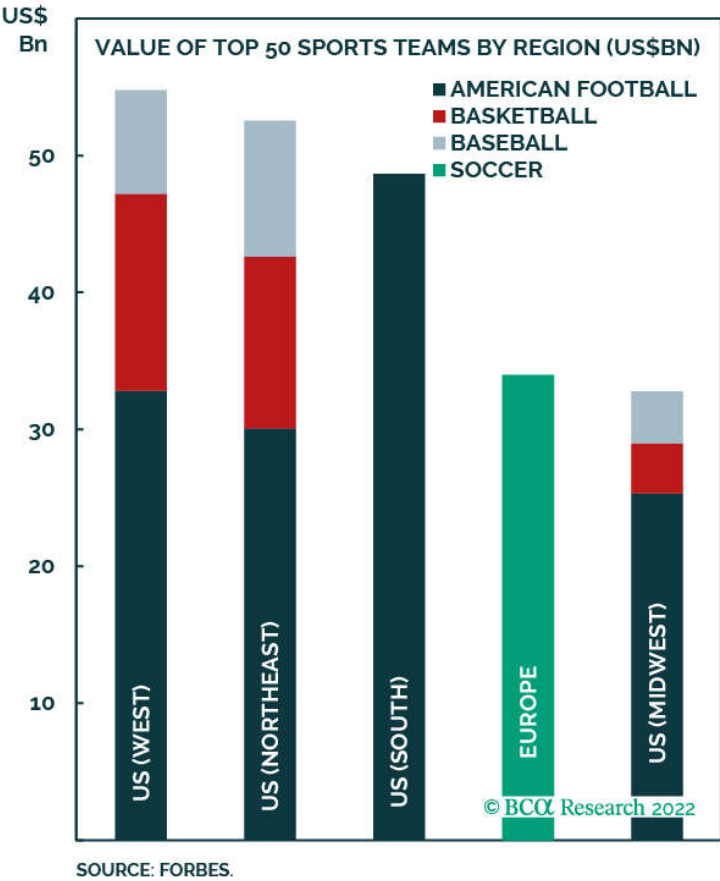


Chart 27
The US Sports Market Is Big

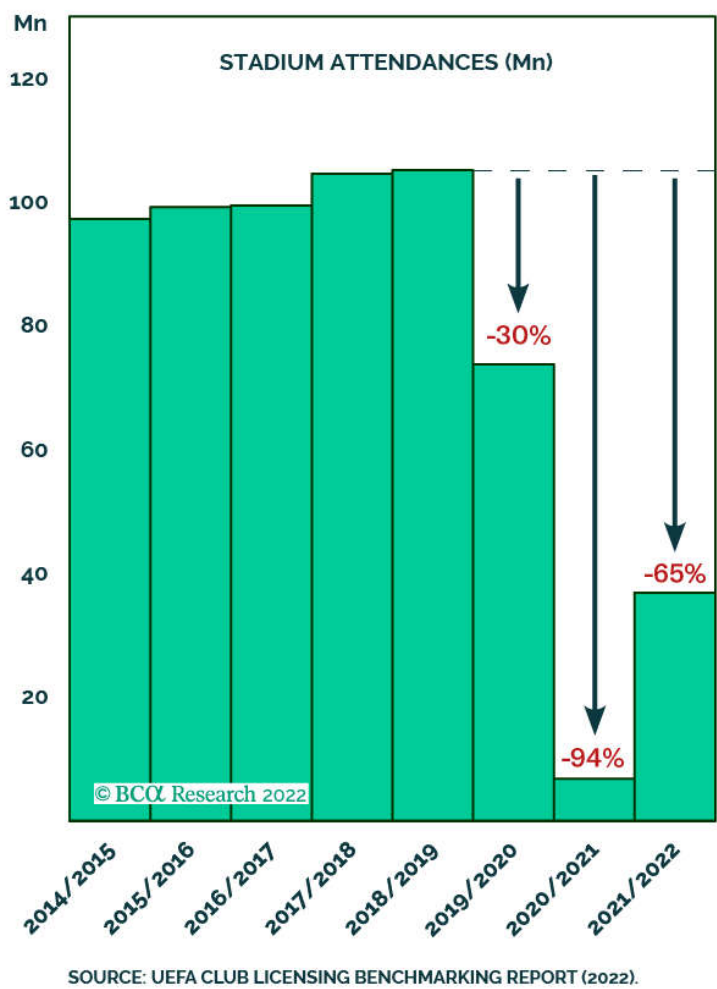


It remains to be seen whether commercial success for soccer in the US will translate to success on the pitch for its men's national team. The US was not particularly convincing during this tournament's qualifiers, finishing third behind Mexico and Canada. However,

what is clear is that the nation cares more about soccer than ever. Just like generational changes in the US will lead to a new consensus in politics and economics, a new consensus in sports is emerging – where America is learning to love the world's most popular game as much as their own.

The Covid-19 pandemic was an enormous shock to football just as it was for the rest of the world. The European football calendar was wiped clean in 2020, from mid-March until mid-May. Competitions only resumed with empty stadiums at first, and eventually with limited attendance due to government-led sanitary restrictions for public events.

Chart 28
Empty Stadiums, Empty Pockets



The collapse in attendance of 94% and 65% in the 2020/2021 and 2021/2022 seasons, respectively, inflicted a significant blow to club revenues (**Chart 28**). While smaller teams were more affected since they derive a higher share of their sales from matchday

tickets, the top European clubs, whose revenues come mostly from TV rights and commercial sponsors, were not left unscathed. Top European clubs saw their revenues fall by 11% on average from 2019 to 2020. Some teams such as FC Barcelona were particularly affected, with their debt doubling over the course of the pandemic, sinking the storied club into a crisis.

Overall, the pandemic has revealed to these clubs how fragile their business model is, while also highlighting the need to find new and durable sources of profit.

The problem for these teams is very clear: Most of the immense economic dividends from the sport's popularity are not accrued by them. In order to remain competitive, football clubs must spend exorbitant amounts in transfer fees, which have ballooned to hundreds of millions of dollars over the past two decades (**Chart 29**). They also must spend a large share of their revenues on players' annual salaries, which can amount to more than \$30 million for some superstars. No other business is tilted in favor of labor as much as professional football, with payrolls now accounting for more than 75% of revenues after the pandemic (**Chart 30**).

Chart 29

Transfer Hyperinflation

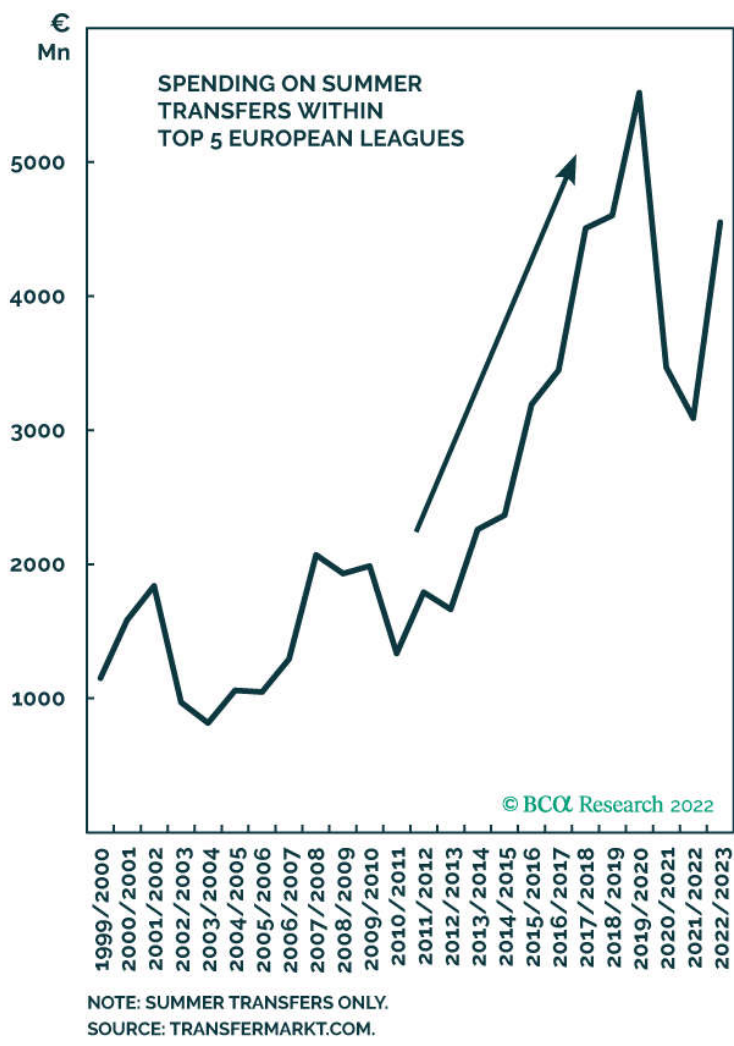
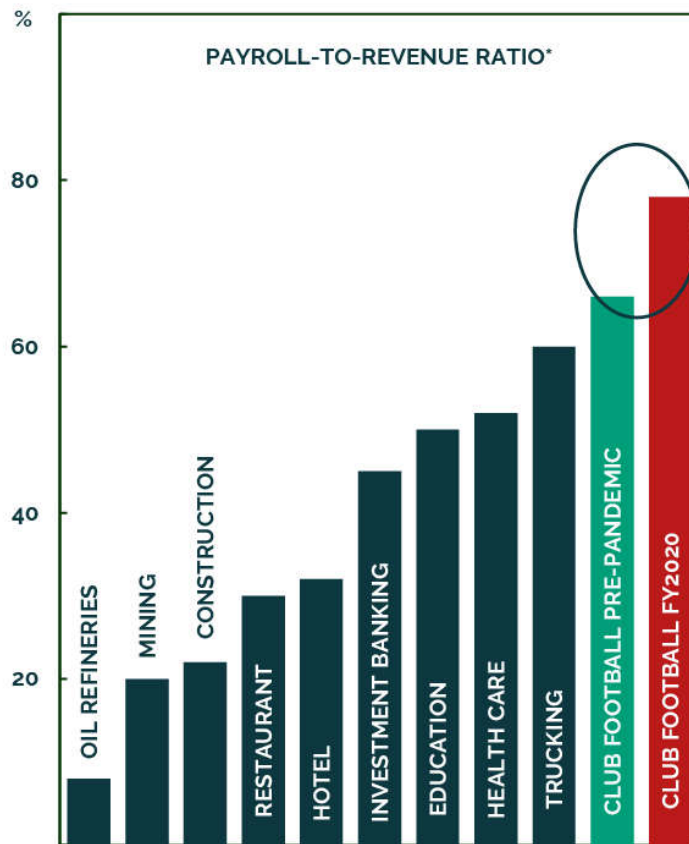


Chart 30
Heavy Payrolls

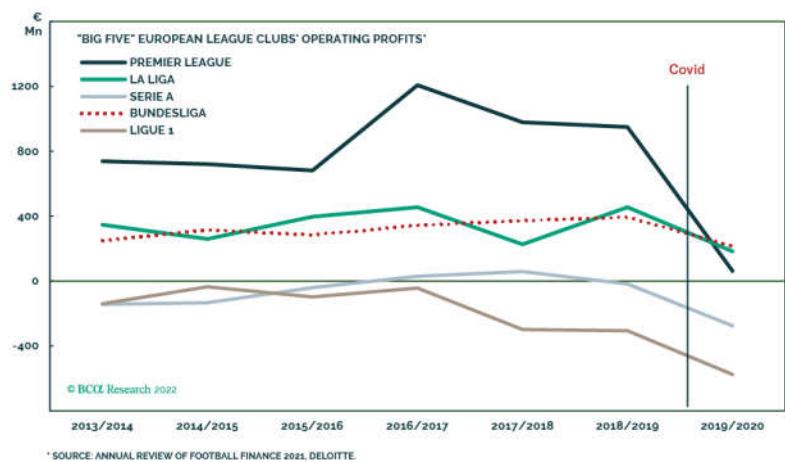


* SOURCE: UEFA CLUB LICENSING BENCHMARKING REPORT (2022).

No wonder European football clubs are notoriously lousy businesses. According to a report by Deloitte, the “Big Five” European leagues made a cumulative operating profit of less than 1.5 billion euros during the 2018/2019 season and operated at a loss during the pandemic (**Chart 31**). The entire English Premier League, the most commercially successful league in the world, had barely more operating income in 2021 than the Dallas Cowboys, even though it earned five times the revenue.

Chart 31

Football Clubs Are Not Profitable Businesses

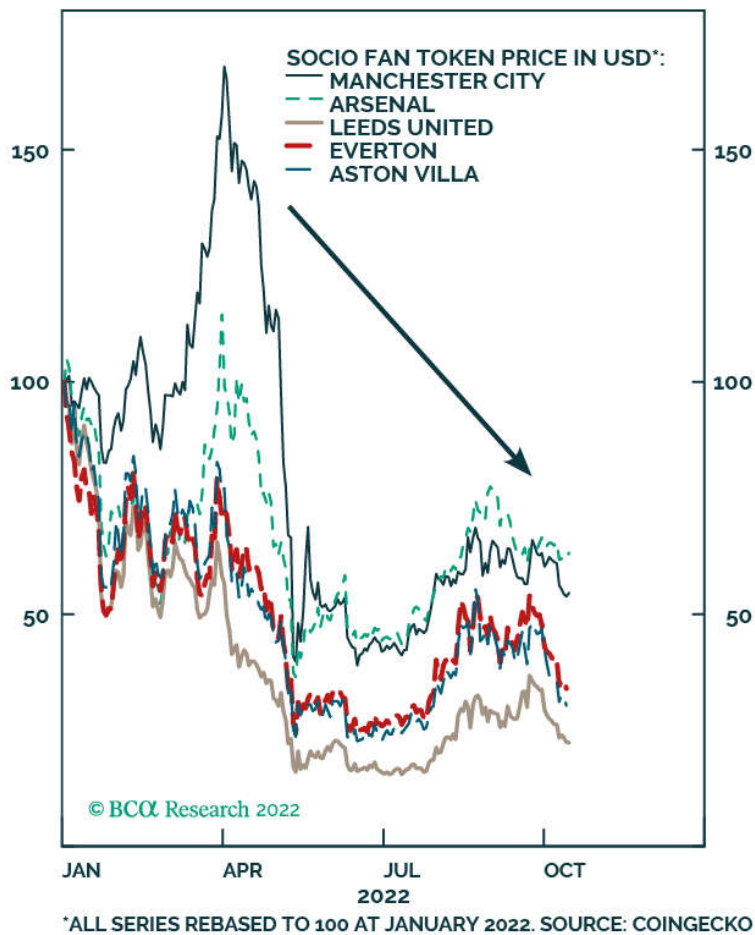


Implementing a franchise system like American sports, which was the model proposed by Florentino Perez for the European Super League, could be an alternative. The revenue-sharing agreement in American leagues allows for more cash-flow predictability. In contrast, revenues for European clubs are more volatile, as they tend to depend on qualification and performance in different tournaments. Moreover, American sports closed system eliminates the risk of relegation and increases owner leverage. Salaries in American sports leagues stand at 50% of revenues or less, much lower than their European counterparts.

Another solution for football's business problems has come from an unlikely source: NFTs. NFTs allow football clubs to auction digital memorabilia and collectibles to fans – essentially providing them with a cheap way to monetize their brand. They also give clubs the ability to grant token holders special experiences or control over certain aspects of the team. For example, Socios tokens give fans a say on the shirt number of new signings as well as what music to play when a team scores a goal.

The world of football has fully embraced these digital assets. At the beginning of the year, the Premier League auctioned off its first NFT license, with bids reportedly ranging from \$299 million to \$600 million over four years. 17 clubs out of 20 in the PL have signed deals with fan token startups such as the French startup Sorare – the NFT-based fantasy football game. French club PSG even went as far as to pay Lionel Messi a one-time bonus using its PSG tokens.

Chart 32
Risks Associated With The Metaverse



Much like in financial markets, there are good reasons to be skeptical about NFTs. The fall in cryptocurrency prices since the start of the year has led to a severe decline in the prices of many of these tokens (**Chart 32**). In March, Liverpool FC launched a series of NFTs, LFC Heroes Club, which went 90% unsold. More worryingly, the space has been rife with failed ventures. A project themed “Ape Kids Football Club,” endorsed by former English captain John Terry, collapsed by 90% within a month.

Still, the world of football remains undeterred. In the recent *Ballon d’Or* ceremony, all the winners received an NFT in addition to their physical trophy. Even as cryptocurrency prices have fallen, NFTs continue to fetch large amounts of money from fans. In July, Sotheby’s auctioned an NFT of ex-football legend Johan Cruyff for more than half a million dollars – the first of a series called *In a Way Immortal*, issued by FC Barcelona.

The long-term viability of NFTs remains a big question mark. At BCA Research, we are divided on the topic, but will be monitoring the business of football as a case study to determine whether NFTs turn out to be just a fad or a legitimate innovation.



This report was brought to you by F.C. BCA Research. Any errors and omissions are the fault of our own slow-footed defense and poor goalkeeping. The authors of the report do not encourage sports gambling and advise readers that quantitative models, like football strikers, occasionally misfire in front of an open net. We greatly thank the patience of our Layout & Design Team, which made time in its busy schedule publishing actual investment-relevant research to produce this report. Team management also wishes to apologize, in advance, to the company IT department for the network bandwidth that the authors will invariably and wantonly waste on streaming World Cup matches during working hours. Finally, we wish to thank our clients for engaging us in discussions about macroeconomics, geopolitics, the markets, life, and sports. It is from you that we draw the inspiration for our research and to whom we dedicate all of our efforts.



Latest from BCA Special Reports

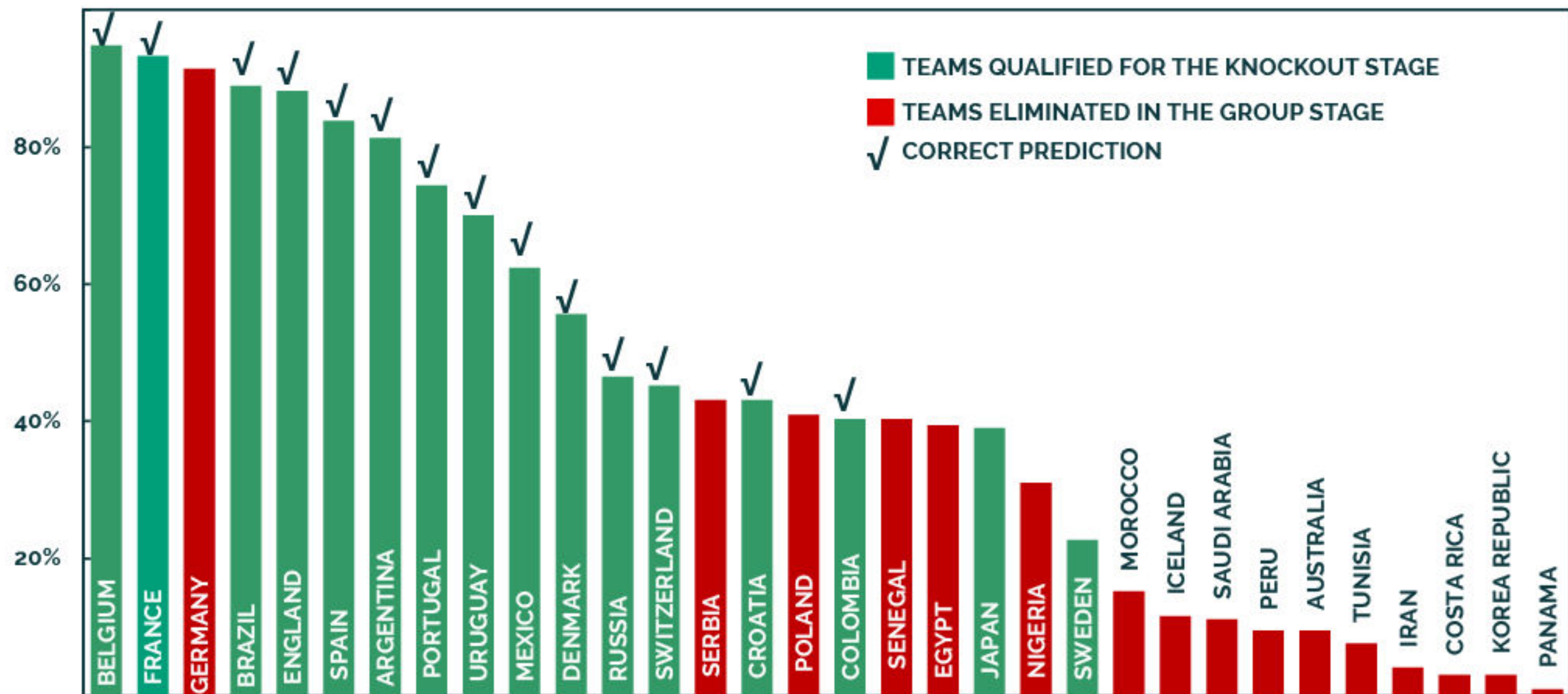
- ¹ Read: young analysts burning midnight oil calculating the “GINI coefficient” of the Brazilian National Football Team instead of looking up Malaysia’s NPL levels!
- ² For very much the wrong reasons! Who would have guessed that studious macroeconomists – and a few geopolitical strategists – can argue so viciously with referees! It must be all the “policy error” talk. In one year that I anchored the team’s defense, BCA Research squad led the league in red cards. To this day, I blame BCA former US Equity Strategist Anastasios Avgeriou.
- ³ Disclaimer: The authors do not endorse or encourage gambling on sporting events using our models.
- ⁴ FIFA 23 will be the last game in the series bearing the FIFA

name. From 2023 onwards, it will be known as EA Sports FC.

- ⁵ The OP model makes two critical assumptions: (1) it assumes that the (χ_i, β, γ) function has the form of a continuous probability distribution function which is the standard normal distribution function of a linear combination of our explanatory variables; (2) it assumes proportional odds between each category in the dependent variable. Assumption (2) was confirmed using the proportional odds Brant test, validating that the ordered probit is the best suited model for our purpose. Please see Alexander, Carol, *Market Risk Analysis: Practical Financial Econometrics* (John Wiley & Sons) 2008, 426 pages.
- ⁶ Please see J. Bloomfield, R. Polman, and P. O'Donoghue, "Physical Demands of Different Positions in FA Premier League Soccer," *Journal of Sports Science & Medicine* 6:1 (2007), 63-70.
- ⁷ Please see Seife Dendir, "When do soccer players peak? A note," *Journal of Sports Analytics* 2 (2016), 89-105.
- ⁸ Please see H. Sarmiento et al, "Match analysis in football: a systematic review," *Journal of Sports Sciences* 32:20 (2014), 1831-1843.
- ⁹ We limit the goal count to the following possibilities: [0, 1, 2, 3, 4, 5+]
- ¹⁰ See Nevill et al. (2002) and Unkelbach & Memmert (2010).
- ¹¹ Argentina also struggled mightily to reach the final. The team barely made it out of the group stage, finishing third in the group (before 1998, the best ranked third-placed teams advanced to the knockouts). Additionally, Argentina only won two out of the seven games played in regular time, winning both the quarter- and semifinals on penalties.
- ¹² He told reporters the following in a press conference in March: "We are playing in a country that FIFA says they want to develop football there. That's bull****, but it doesn't matter. It's about money, about commercial interests. That matters in FIFA. Why do you think I'm not on any committee at FIFA or UEFA with my expertise?"
- ¹³ The poor play of Harry Maguire – one of England's starting defenders - has become a meme and a source of constant worry for English fans.

- ¹⁴ As long as there isn't a golf course near the training grounds.
- ¹⁵ As we go to press, it is still unclear whether 2018 French heroes N'Golo Kanté and Paul Pogba will be part of the selected players, let alone at their top level. Since last season, Kanté has missed about 30 official games because of a bad series of injuries, and Pogba underwent a selective external arthroscopic meniscectomy in early September.
- ¹⁶ Aside from Aussie fans.
- ¹⁷ That was before any of the millennials and Gen Z researchers working on this report were even born.
- ¹⁸ In the final minutes of the game, Luis Suarez intentionally stopped Ghana's header at the goal line with his hand, in what would have been the winner. Suarez was sent off, but Ghana's Asamoah Gyan failed to score the penalty awarded for the hand ball. Uruguay won the match in a penalty shoot-out.
- ¹⁹ A tight 1-0 win over football superpower Iran.
- ²⁰ In order to favor our core model (M1), which uses the team average player rating variable, we assigned a weight $\alpha = 0.66$.
- ²¹ Despite two of the authors being French and risking endless strikes!
- ²² As we go to press, Hazard has played only 158 minutes with Madrid so far this season.
- ²³ The German researcher in our team insisted on putting this factoid in this report, which has ZERO correlation with the fact that this "ghost" goal was scored against Germany in the 1966 final.
- ²⁴ The Canadian Women's National Soccer team won the gold medal in the 2021 Olympics!
- ²⁵ According to Teranet and the National Bank of Canada.
- ²⁶ Italy in 1934 and 1938, and Brazil in 1958 and 1962.
- ²⁷ The ownership of football clubs has also changed dramatically. Only five Premier League clubs are now majority-owned by the British, in contrast to 10 in 2011.
- ²⁸ In the UK, many football clubs date back to the second half of the Industrial Revolution. Manchester United, Arsenal, and West

Ham United were started by workers from the rail and iron companies.



NUMBER OF TOP-RATED PLAYERS AMONG THE TOP 5 FOR EACH POSITION ON THE PITCH ACCORDING TO THE FIFA VIDEO GAME SIMULATION

2006 WORLD CUP		2010 WORLD CUP		2014 WORLD CUP		2018 WORLD CUP		2022 WORLD CUP	
Brazil	11	Spain	14	Spain	12	Spain	8	Brazil	9
France	7	England	10	Germany	10	France	7	Portugal	8
Italy	6	Italy	10	Argentina	6	Brazil	6	Germany	8
Argentina	6	France	9	Brazil	4	Germany	6	France	7
England	6	Argentina	6	France	4	Argentina	5	England	6

NOTE: PLEASE SEE TABLE 8 ON PAGE 29 FOR MORE DETAILS.

PLAYER-BASED VARIABLES

Team Average Player Rating

Team Average Potential Rating Difference between the actual overall average rating and the potential overall average rating.

Average Rating - Goalkeeper
Average Age - Goalkeeper
Average Number Of Caps - Goalkeeper

Average Rating - Defenders
Average Age - Defenders

Average Number Of Caps - Defenders

Average Rating - Midfielders
Average Age - Midfielders
Average Number Of Caps - Midfielders

Average Rating - Forwards

Average Age - Forwards

Average Number Of Caps - Forwards

Spine Average Rating We define spine as the combination of central backs, defensive midfielders and central midfielders.
Spine Average Age

Speed Position Average Rating We define speed positions as the combination of right and left backs as well as right and left wingers.

Speed Positions Average Age

Forwards vs. Defense
Match-Up Average Rating Difference between the average rating of Forwards and the average rating of Defenders.

Forwards vs. Spine
Match-Up Average Rating Difference between the average rating of Forwards and the average rating of Spine.

Speed Positions vs. Defense
Match-Up Average Rating Difference between the average rating of Speed Positions and the average rating of Defenders.

Player GINI Coefficient Calculated as half of the relative mean absolute difference of the players' rating in a team.

English Premier League Number of players in the list of 23 playing in the English Premier League at the club level.

TEAM-BASED VARIABLES

MOMENTUM

Based on the last 5 World Cup qualifying games for any given World Cup - adjusted for the difference in FIFA World Ranking.

Short Term Note: Since the host of a World Cup does not need to go through the qualifiers, we used the 5 most recent international friendly games played by Germany (2006), South Africa (2010), Brazil (2014), and Russia (2018).

Long Term Based on the relative FIFA World Ranking.

EXPERIENCE

Caps The deviation of a given national team average number of caps from the average number of caps amongst all the players participating in a given World Cup.

International Competitions Sum of all the past FIFA international competitions played by every player on the team.

Age The deviation of a given national team average age from the average age amongst all the players participating in a given World Cup.

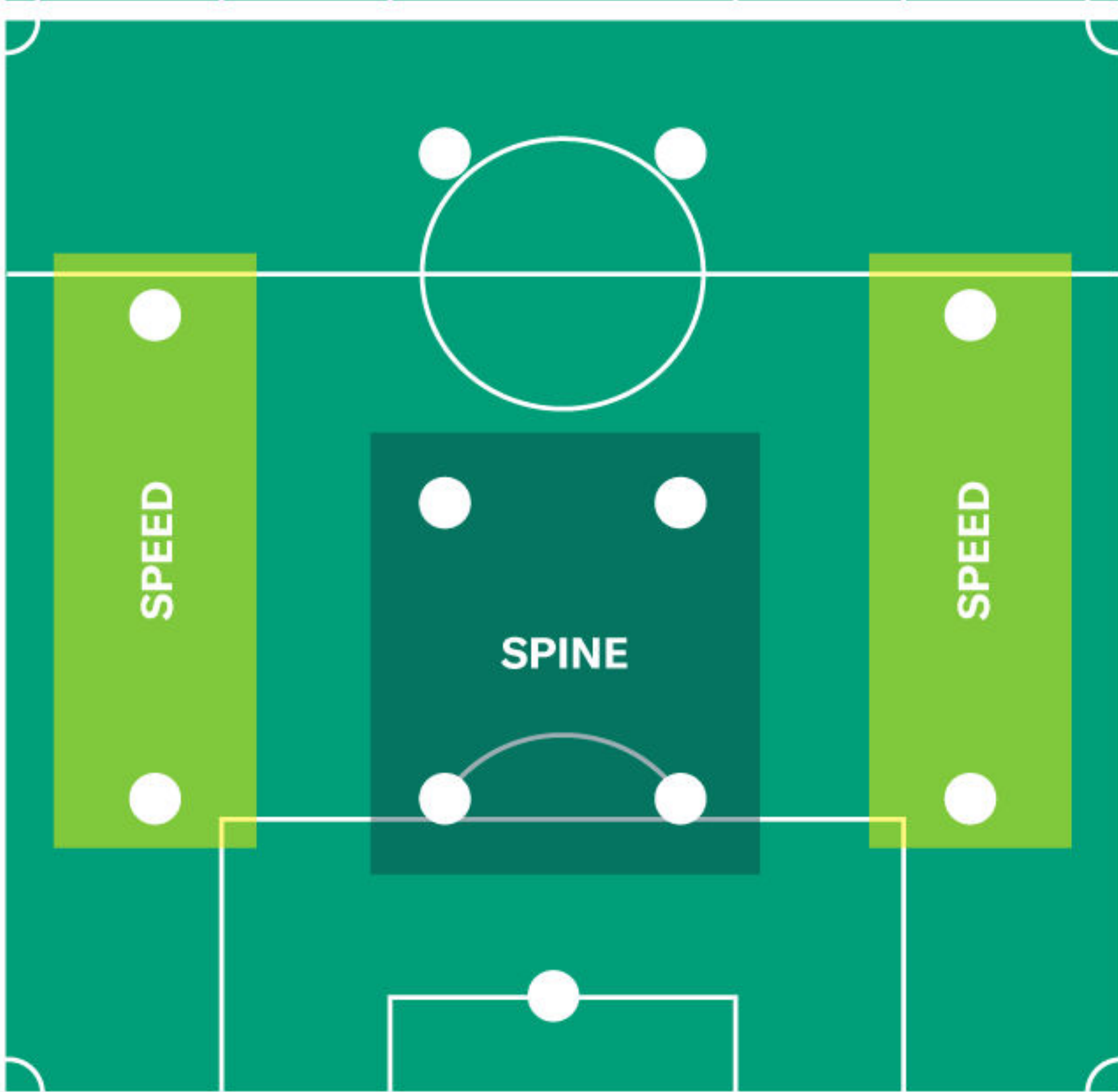
Ability To Play Under Pressure Number of players on a national team who played a Champions League final in the past 4 seasons.

SYNERGY

Club Level **Coefficients based on the number of players for a given national team playing together at the club level.**

Local League Level Coefficients based on the number of players for a given national team playing in the same local league.

NOTE: THE FINAL EXPLANATORY VARIABLES USED IN OUR GROUP STAGE AND KNOCKOUT-STAGE MODELS ARE HIGHLIGHTED. THESE ARE THE VARIABLES THAT ENTER OUR MODELS AND ARE SUPPORTED BY ACADEMIC LITERATURE.



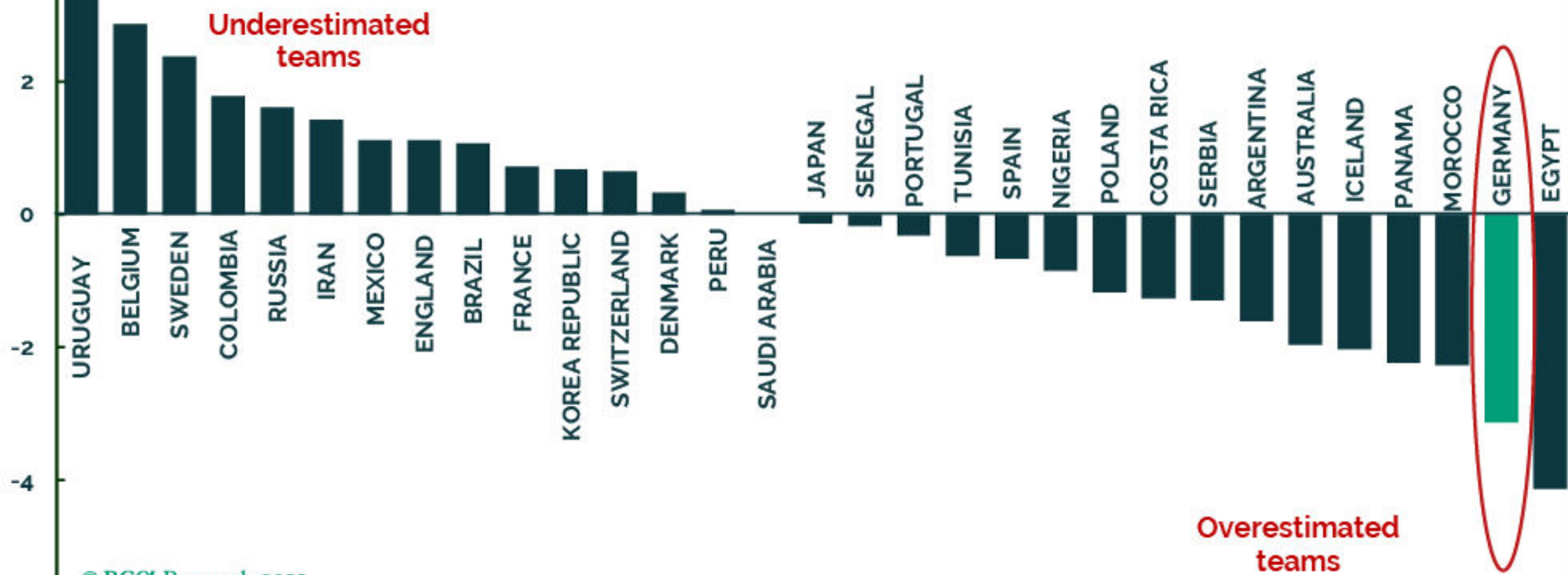
TEAMS	AVERAGE PLAYER RATING	FORWARD AVERAGE AGE	DEFENDERS AVERAGE CAPS	SPEED POSITIONS AVERAGE RATING
ARGENTINA	82.3	29.4	37	84.6
AUSTRALIA	70.0	28.3	16	69.7
BELGIUM	80.9	26.7	76	80.8
BRAZIL	83.9	26.2	55	83.6
CAMEROON	73.4	28.0	29	72.4
CANADA	72.5	24.0	27	73.2
COSTA RICA	69.1	25.5	52	68.2
CROATIA	78.7	26.5	10	76.5
DENMARK	76.3	26.7	40	75.0
ECUADOR	73.5	28.3	20	75.0
ENGLAND	83.9	25.0	34	84.5
FRANCE	85.3	29.3	27	84.0
GERMANY	83.9	26.0	20	82.0
GHANA	74.9	28.5	16	72.7
IRAN	69.5	28.8	40	70.8
JAPAN	74.5	27.7	46	74.1
KOREA REPUBLIC	72.5	27.3	52	72.9
MEXICO	76.7	27.0	44	76.8
MOROCCO	75.5	27.0	32	79.3
NETHERLANDS	81.5	24.7	37	79.2
POLAND	75.9	28.0	39	73.4
PORTUGAL	84.0	27.5	33	83.3
QATAR	65.0	28.4	67	65.0
SAUDI ARABIA	69.6	27.5	19	69.9
SENEGAL	77.3	25.4	33	77.7
SERBIA	77.9	26.2	24	80.0
SPAIN	82.8	25.0	33	81.8
SWITZERLAND	76.4	23.5	48	76.4
TUNISIA	70.9	30.0	38	70.8
URUGUAY	79.9	29.3	44	73.0
USA	75.5	23.7	23	77.7
WALES	73.1	27.3	45	73.0

	HOME WIN		
	PRE- COVID	GHOST GAMES	P-VALUE
OVERALL	42.56%	39.05%	0.259
BUNDESLIGA	44.67%	> 32.53%	0.028**
2. BUNDESLIGA (SECOND DIVISION)	41.58%	43.21%	0.779
3. LIGA (GERMAN THIRD DIVISION)	41.65%	40.91%	0.881

SOURCE: Fischer, Kai; Haucap, Justus (2020) : Does crowd support drive the home advantage in professional soccer? Evidence from German ghost games during the COVID-19 pandemic, DICE Discussion Paper, No. 344, ISBN 978-3-86304-343-8, Heinrich Heine University Düsseldorf, Düsseldorf Institute for Competition Economics (DICE), Düsseldorf

WORLD CUP	REIGNING CHAMPION	PERFORMANCE
2022	France	???
2018	Germany	Group stage
2014	Spain	Group stage
2010	Italy	Group stage
2006	Brazil	Quarterfinals
2002	France	Group stage
1998	Brazil	Final
1994	Germany	Round of 16
1990	Argentina	Final
1986	Italy	Round of 16

REALIZED POINTS MINUS EXPECTED POINTS
FROM 2018 BCA GROUP STAGE WORLD CUP MODEL



WORLD CUP	HOST	PERFORMANCE
2022	Qatar	???
2018	Russia	Quarter-finals
2014	Brazil	Semi-finals
2010	South Africa	Group Stage
2006	Germany	Semi-finals
2002	South Korea	Semi-finals
	Japan	Round of 16
1998	France	Winner
1994	United States	Round of 16
1990	Italy	Semi-finals
1986	Mexico	Quarter-finals
1982*	Spain	Second round*
1978*	Argentina	Winner
1974*	West Germany	Winner
1970	Mexico	Quarter-finals
1966	England	Winner
1962	Chile	Semi-finals
1958	Sweden	Final
1954	Switzerland	Quarter-finals
1950**	Brazil	Second of final round**
1946	Cancelled due to World War II	
1942		
1938	France	Quarter-finals
1934	Italy	Winner
1930	Uruguay	Winner

* UNIQUE FORMAT USED DURING THESE COMPETITIONS. TWO ROUNDS. OF GROUP MATCHES TO GET TO THE SEMI-FINALS.

** THE WINNER OF THE COMPETITION WAS DETERMINED IN A FINAL GROUP STAGE, PLAYED IN ROUND-ROBIN FORMAT.

TEAMS	PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS	EXPECTED GOAL DIFFERENTIAL	
NETHERLANDS	87%	6.1	2	
SENEGAL	70%	4.8	1	
ECUADOR	30%	3.3	-1	
QATAR*	14%	2.3	-1	
PROBABILITY OF TEAM 1				
TEAM 1	TEAM 2	WIN	DRAW	LOSS
SENEGAL	NETHERLANDS	21%	25%	53%
QATAR	ECUADOR	44%	27%	29%
QATAR	SENEGAL	22%	26%	52%
NETHERLANDS	ECUADOR	69%	20%	12%
ECUADOR	SENEGAL	14%	22%	64%
NETHERLANDS	QATAR	58%	24%	18%

* HOME ADVANTAGE +12%.

TEAMS	PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS	EXPECTED GOAL DIFFERENTIAL	
ENGLAND	95%	7.0	3	
USA	75%	5.0	1	
WALES	23%	3.1	-1	
IRAN	7%	1.7	-3	
PROBABILITY OF TEAM 1				
TEAM 1	TEAM 2	WIN	DRAW	LOSS
ENGLAND	IRAN	84%	12%	5%
USA	WALES	51%	26%	23%
WALES	IRAN	49%	26%	25%
ENGLAND	USA	54%	25%	21%
IRAN	USA	9%	18%	73%
WALES	ENGLAND	7%	15%	77%

TEAMS	PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS	EXPECTED GOAL DIFFERENTIAL	
ARGENTINA	80%	5.6	1	
MEXICO	67%	4.9	0	
POLAND	31%	3.6	-1	
SAUDI ARABIA*	22%	2.7	-1	
PROBABILITY OF TEAM 1				
TEAM 1	TEAM 2	WIN	DRAW	LOSS
ARGENTINA	SAUDI ARABIA	65%	15%	20%
MEXICO	POLAND	42%	27%	30%
POLAND	SAUDI ARABIA	47%	21%	32%
ARGENTINA	MEXICO	41%	28%	32%
POLAND	ARGENTINA	18%	24%	59%
SAUDI ARABIA	MEXICO	20%	15%	65%

* HOME ADVANTAGE +6%.

TEAMS	PROBABILITY OF PASSING TO THE NEXT STAGE		EXPECTED POINTS		EXPECTED GOAL DIFFERENTIAL
DENMARK		90%		6.4	2
FRANCE**		63%		4.4	0
TUNISIA		25%		2.9	-1
AUSTRALIA		22%		2.8	-1
PROBABILITY OF TEAM 1					
TEAM 1	TEAM 2		WIN	DRAW	LOSS
DENMARK	TUNISIA		64%	22%	14%
FRANCE	AUSTRALIA		49%	27%	24%
TUNISIA	AUSTRALIA		36%	28%	36%
FRANCE	DENMARK		19%	25%	56%
TUNISIA	FRANCE		22%	26%	52%
AUSTRALIA	DENMARK		10%	19%	72%

* WINNER’S CURSE HAIRCUT OF 28%.

TEAMS		PROBABILITY OF PASSING TO THE NEXT STAGE		EXPECTED POINTS		EXPECTED GOAL DIFFERENTIAL			
SPAIN		87%		6.0		2			
GERMANY		83%		5.8		2			
JAPAN		19%		2.7		-1			
COSTA RICA		11%		2.2		-2			
PROBABILITY OF TEAM 1									
TEAM 1		TEAM 2		WIN		DRAW		LOSS	
GERMANY		JAPAN		60%		23%		17%	
SPAIN		COSTA RICA		72%		18%		10%	
JAPAN		COSTA RICA		41%		27%		32%	
SPAIN		GERMANY		37%		28%		35%	
JAPAN		SPAIN		11%		19%		70%	
COSTA RICA		GERMANY		9%		17%		74%	

WORLD CUP

PERFORMANCE OF JAPAN

2022

Eliminated at Group Stage?

2018

Exit in Round of 16

2014

Eliminated at Group Stage

2010

Exit in Round of 16

2006

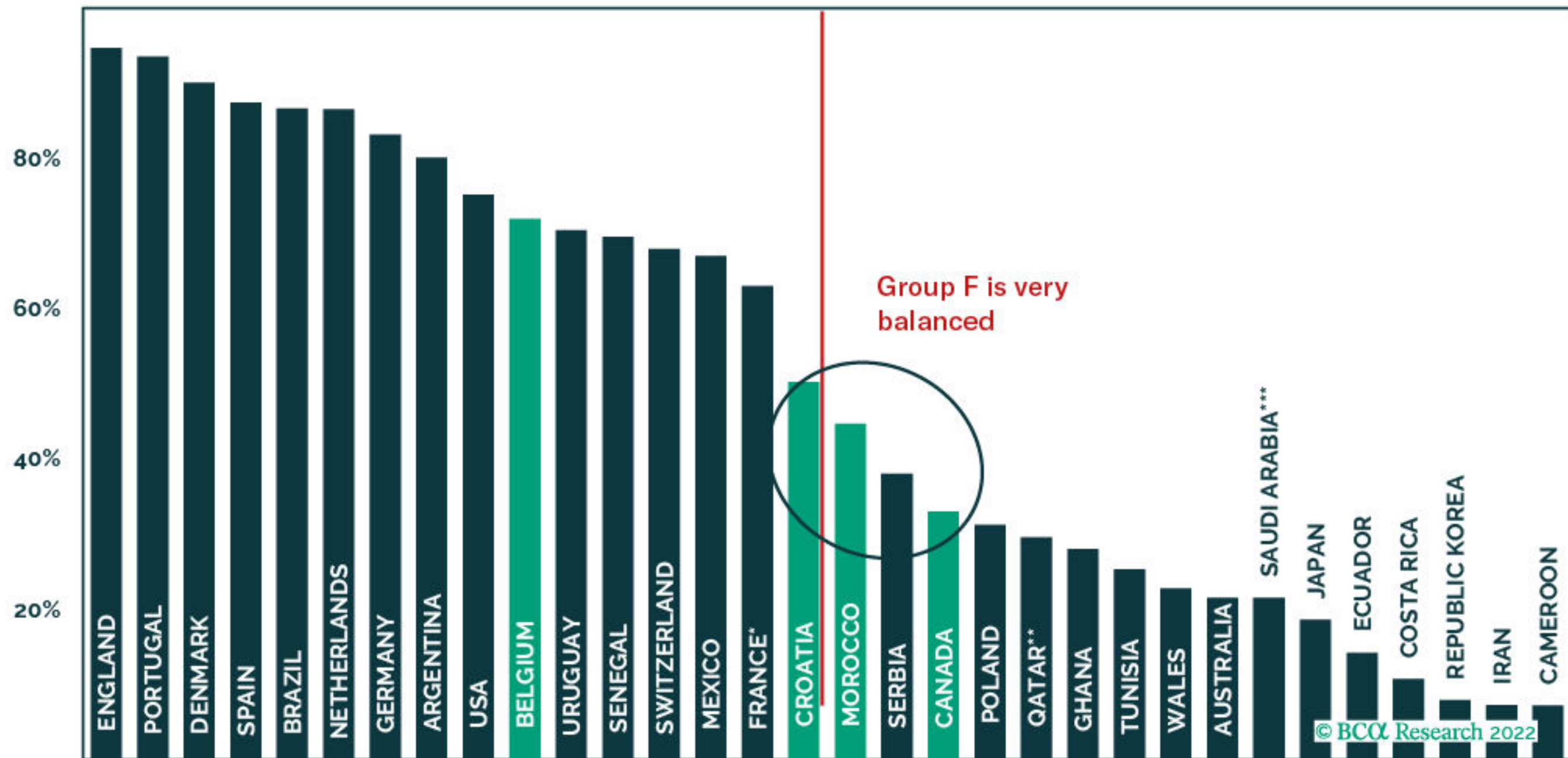
Eliminated at Group Stage

2002

Exit in Round of 16

1998

Eliminated at Group Stage



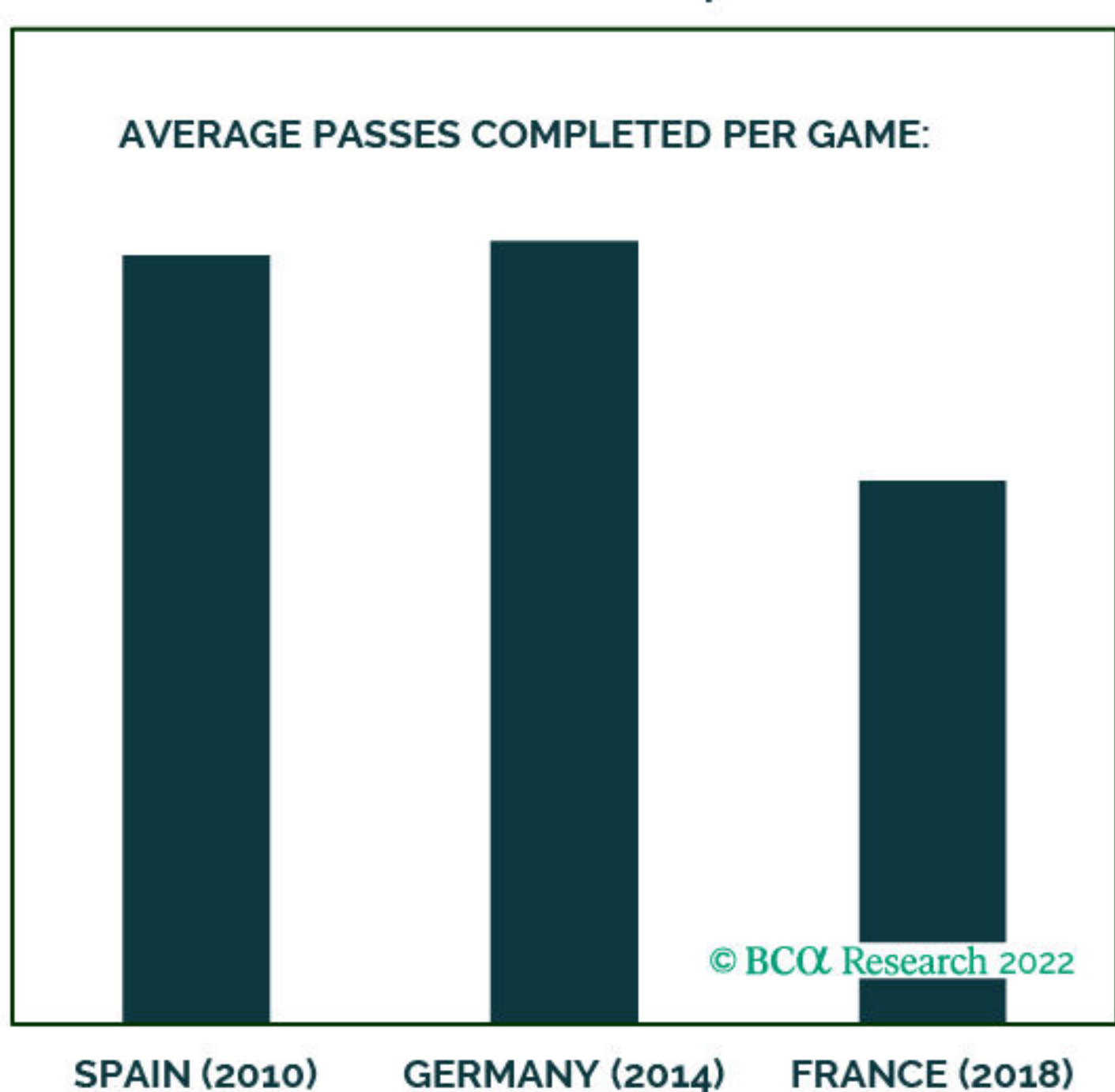
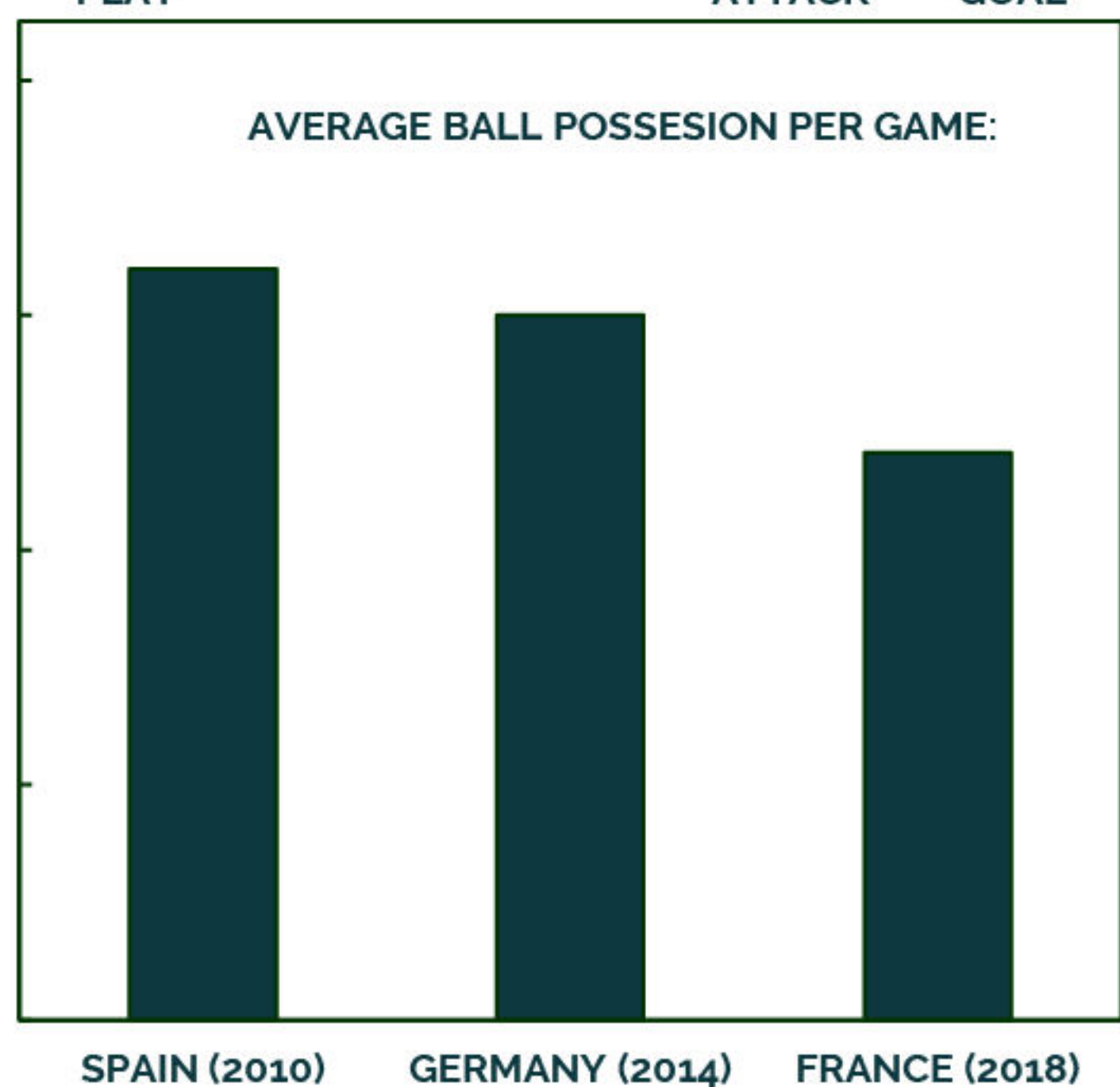
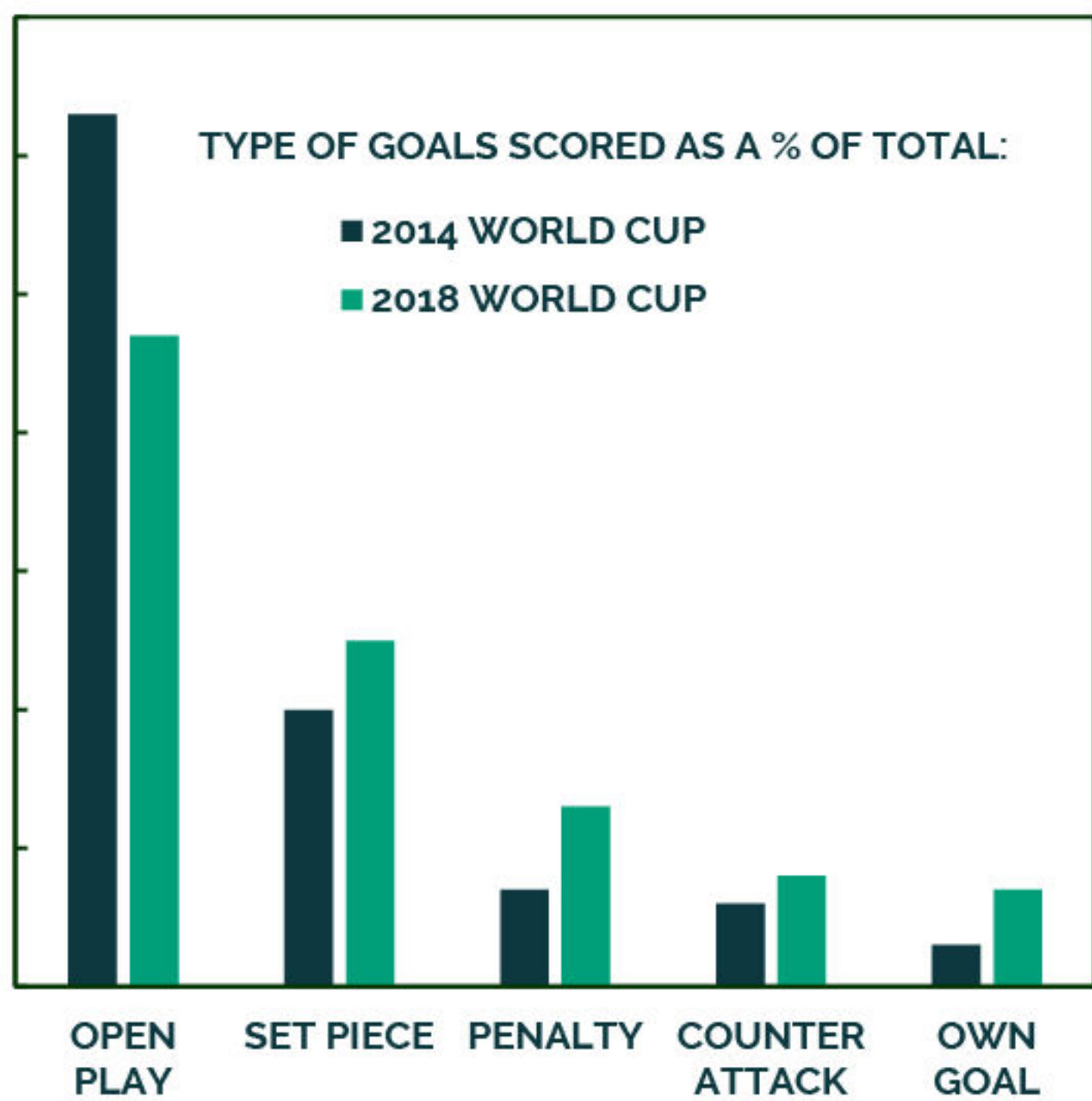
- * WINNER'S CURSE HAIRCUT OF 28%.
- ** HOME ADVANTAGE OF +12%.
- *** HOME ADVANTAGE OF +6%.

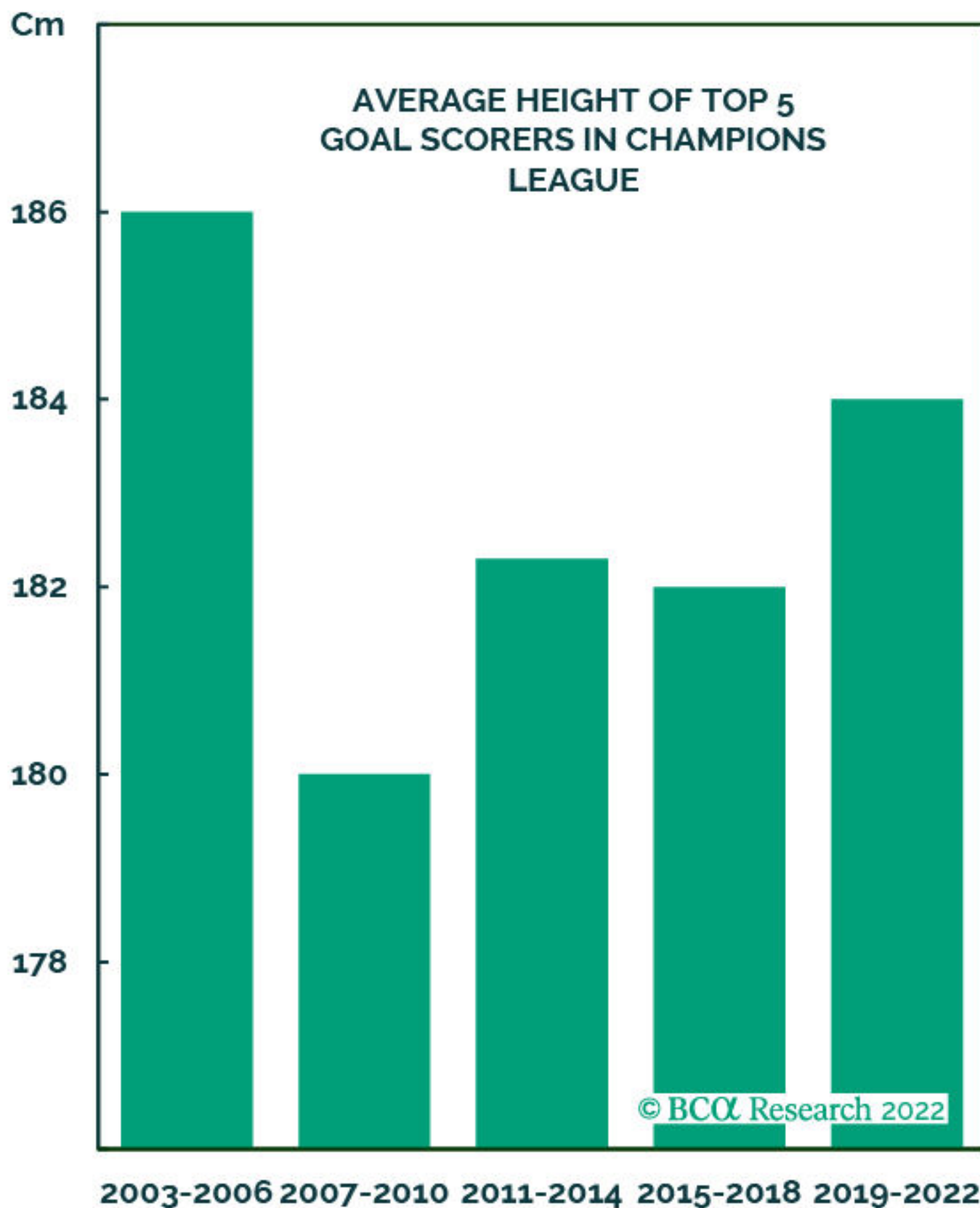
TEAMS		PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS	EXPECTED GOAL DIFFERENTIAL
BELGIUM		72%	4.9	1
CROATIA		50%	3.9	0
MOROCCO		45%	4.0	0
CANADA		33%	3.6	-1
PROBABILITY OF TEAM 1				
TEAM 1	TEAM 2	WIN	DRAW	LOSS
MOROCCO	CROATIA	33%	27%	40%
BELGIUM	CANADA	47%	27%	26%
BELGIUM	MOROCCO	43%	27%	30%
CROATIA	CANADA	37%	28%	35%
CROATIA	BELGIUM	25%	27%	48%
CANADA	MOROCCO	30%	28%	42%

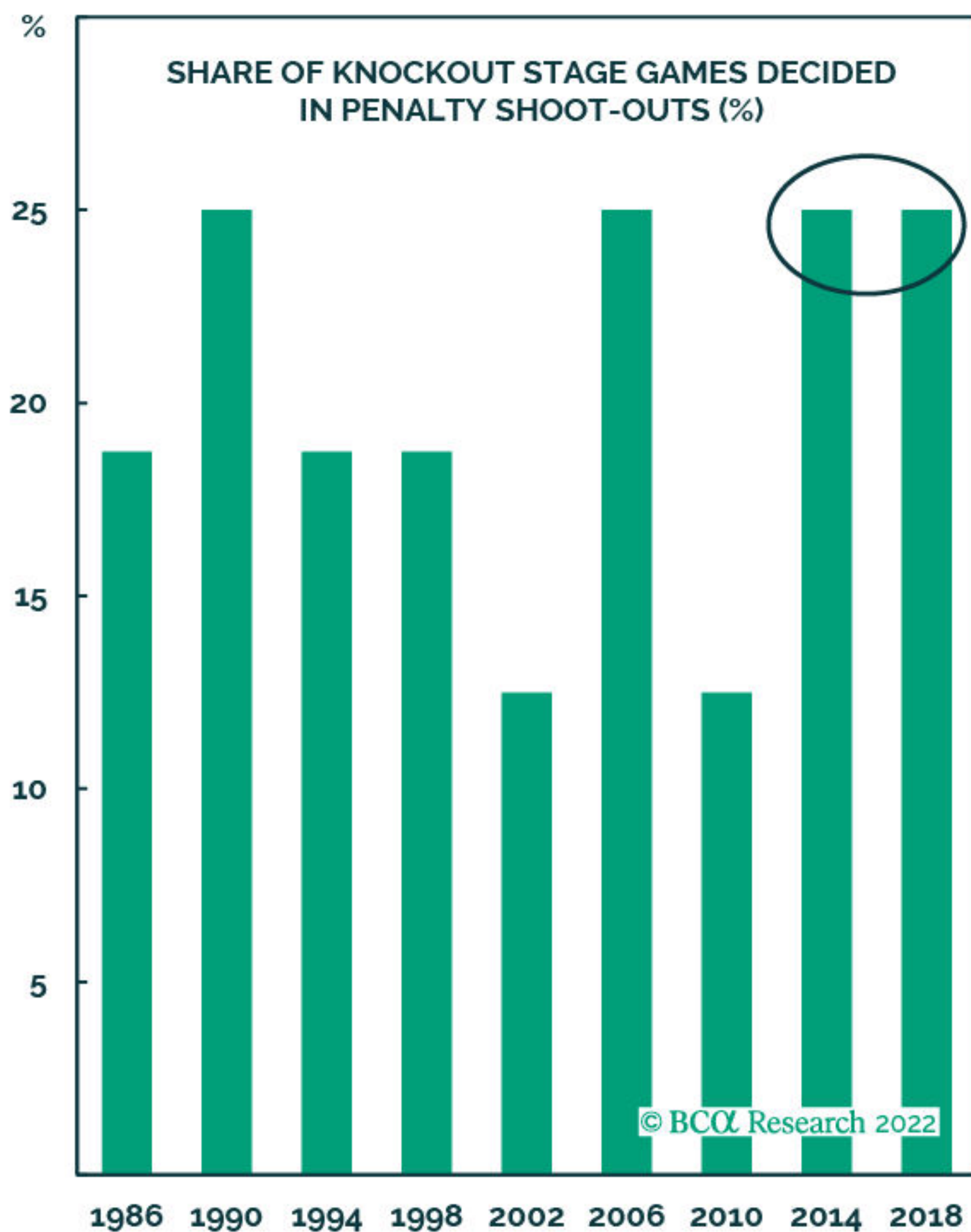
FORWARDS					
LEFT WINGERS		STRIKERS		RIGHT WINGERS	
Neymar Jr	Brazil	Robert Lewandowski	Poland	Lionel Messi	Argentina
Sadio Mané	Senegal	Kylian Mbappé	France	Paulo Dybala	Argentina
Son Heung-min	South Korea	Cristiano Ronaldo	Portugal	Angel Di María	Argentina
Raheem Sterling	England	Harry Kane	England	Gabriel Jesus	Brazil
Jadon Sancho	England	Romelu Lukaku	Belgium	Ferran Torres	Spain
CENTRAL FORWARDS					
		Karim Benzema	France		
		Roberto Firmino	Brazil		
		Memphis Depay	Netherlands		
		Diogo Jota	Portugal		
MIDFIELDERS					
LEFT MIDFIELDERS		CENTRAL MIDFIELDERS		RIGHT MIDFIELDERS	
Leroy Sané	Germany	Kevin De Bruyne	Belgium	Serge Gnabry	Germany
Kingsley Coman	France	Luka Modrić	Croatia	Bukayo Saka	England
Carrasco	Belgium	Leon Goretzka	Germany	Otávio	Portugal
Filip Kostić	Serbia	Frenkie de Jong	Netherlands	Jesus Corona	Mexico
Ivan Perišić	Croatia	Vitinha	Portugal	Angel Mena	Ecuador
CENTRAL ATTACKING MIDFIELDERS			CENTRAL DEFENSIVE MIDFIELDERS		
		Thomas Müller	Germany	N'Golo Kanté	France
		Bernardo Silva	Portugal	Casemiro	Brazil
		Bruno Fernandes	Portugal	Joshua Kimmich	Germany
		Christopher Nkunku	France	Fabinho	Brazil
		Marco Reus	Germany	Rodri	Spain
DEFENDERS					
LEFT BACKS		CENTRAL BACKS		RIGHT BACKS	
João Cancelo	Portugal	Virgil van Dijk	Netherlands	Trent Alexander-Arnold	England
Alphonso Davies	Canada	Rúben Dias	Portugal	Kyle Walker	England
Theo Hernandez	France	Marquinhos	Brazil	Achraf Hakimi	Morocco
Jordi Alba	Spain	Thiago Silva	Brazil	Dani Carvajal	Spain
Marcos Acuña	Argentina	Antonio Rüdiger	Germany	Danilo	Brazil
GOALKEEPERS					
		Manuel Neuer	Germany		
		Thibaut Courtois	Belgium		
		Alisson	Brazil		
		Keylor Navas	Costa Rica		
		Hugo Loris	France		

TEAMS		PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS		EXPECTED GOAL DIFFERENTIAL
BRAZIL		87%	6.2		2
SWITZERLAND		68%	4.9		0
SERBIA		38%	4.0		0
CAMEROON		7%	1.7		-2
PROBABILITY OF TEAM 1					
TEAM 1	TEAM 2	WIN	DRAW		LOSS
SWITZERLAND	CAMEROON	64%	22%		15%
BRAZIL	SERBIA	55%	25%		20%
CAMEROON	SERBIA	16%	22%		62%
BRAZIL	SWITZERLAND	47%	27%		26%
SERBIA	SWITZERLAND	26%	26%		48%
CAMEROON	BRAZIL	6%	13%		81%

TEAMS		PROBABILITY OF PASSING TO THE NEXT STAGE	EXPECTED POINTS		EXPECTED GOAL DIFFERENTIAL
PORTUGAL		94%	6.9		3
URUGUAY		70%	4.8		1
GHANA		28%	3.4		-1
REPUBLIC KOREA		8%	1.7		-3
TEAM 1		TEAM 2	PROBABILITY OF TEAM 1		
			WIN	DRAW	LOSS
URUGUAY		REPUBLIC KOREA	63%	21%	16%
PORTUGAL		GHANA	69%	19%	11%
REPUBLIC KOREA		GHANA	19%	24%	56%
PORTUGAL		URUGUAY	56%	24%	20%
REPUBLIC KOREA		PORTUGAL	4%	10%	86%
GHANA		URUGUAY	22%	25%	53%





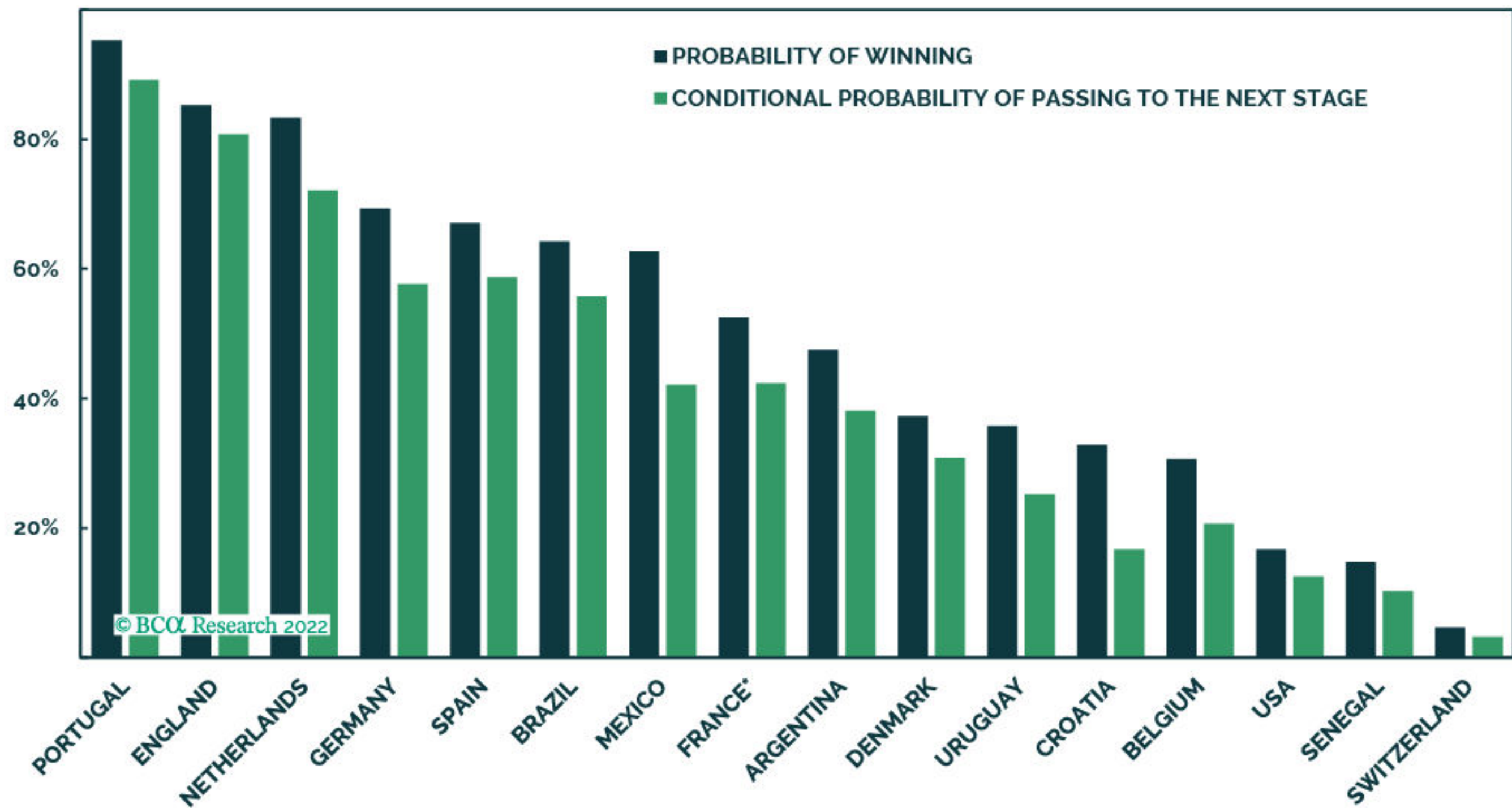


SOURCE: [PLANETWORLDCUP.COM](https://planetworldcup.com)

TEAMS	AVERAGE PLAYER RATING	FORWARD AVERAGE AGE	SYNERGY	FORWARD AVERAGE RATING
Argentina	82.3	29.4	34	86.8
Belgium	80.9	26.7	52	79.3
Brazil	83.9	26.2	76	84.6
Croatia	78.7	26.5	16	80.0
Denmark	76.3	26.7	22	73.3
England	83.9	25.0	166	85.8
France	85.3	29.3	52	89.0
Germany	83.9	26.0	256	83.0
Mexico	76.7	27.0	46	79.7
Netherlands	81.5	24.7	58	81.0
Portugal	84.0	27.5	58	85.5
Senegal	77.3	25.4	22	78.6
Spain	82.8	25.0	148	81.0
Switzerland	76.4	23.5	52	72.5
Uruguay	79.9	29.3	22	81.5
USA	75.5	23.7	22	75.7

Team	Probability Of Winning	Conditional Probability of Passing To The Next Stage	Opponent
Portugal	95%	89%	Switzerland
England	85%	81%	Senegal
Netherlands	83%	72%	USA
Germany	69%	58%	Belgium
Spain	67%	59%	Croatia
Brazil	64%	56%	Uruguay
Mexico	63%	42%	Denmark
Argentina	58%	49%	France
France*	42%	31%	Argentina
Denmark	37%	31%	Mexico
Uruguay	36%	25%	Brazil
Croatia	33%	17%	Spain
Belgium	31%	21%	Germany
USA	17%	13%	Netherlands
Senegal	15%	10%	England
Switzerland	5%	3%	Portugal

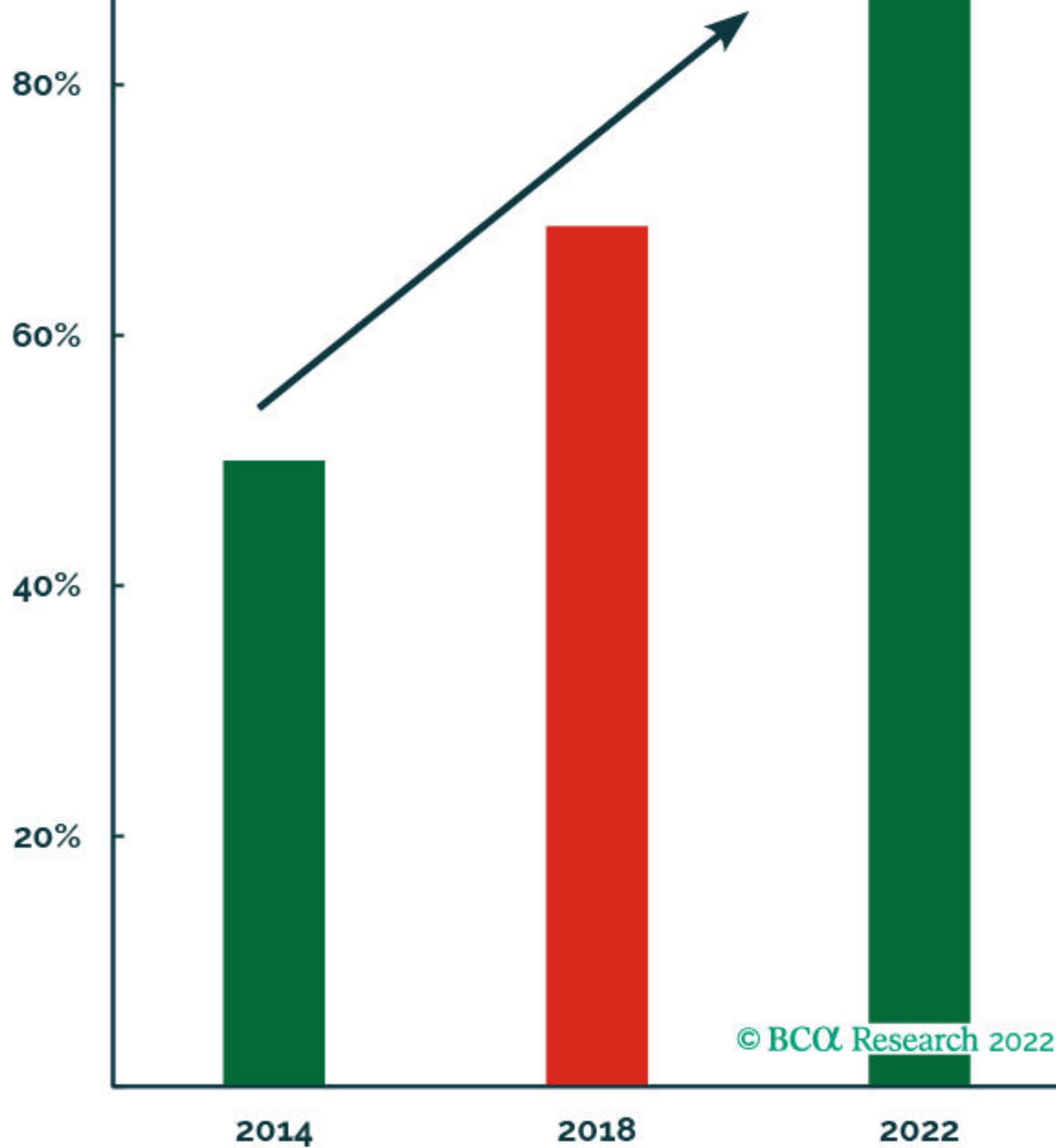
*** WINNER'S CURSE HAIRCUT OF 28%.**



* WINNER'S CURSE HAIRCUT OF 28%.

TEAM	PROBABILITY OF WINNING	CONDITIONAL PROBABILITY OF PASSING TO THE NEXT STAGE	OPPONENT
ENGLAND	82%	66%	MEXICO
ARGENTINA	74%	24%	NETHERLANDS
BRAZIL	63%	35%	SPAIN
PORTUGAL	56%	50%	GERMANY
GERMANY	44%	26%	PORTUGAL
SPAIN	37%	22%	BRAZIL
NETHERLANDS	21%	19%	ARGENTINA
MEXICO	18%	8%	ENGLAND

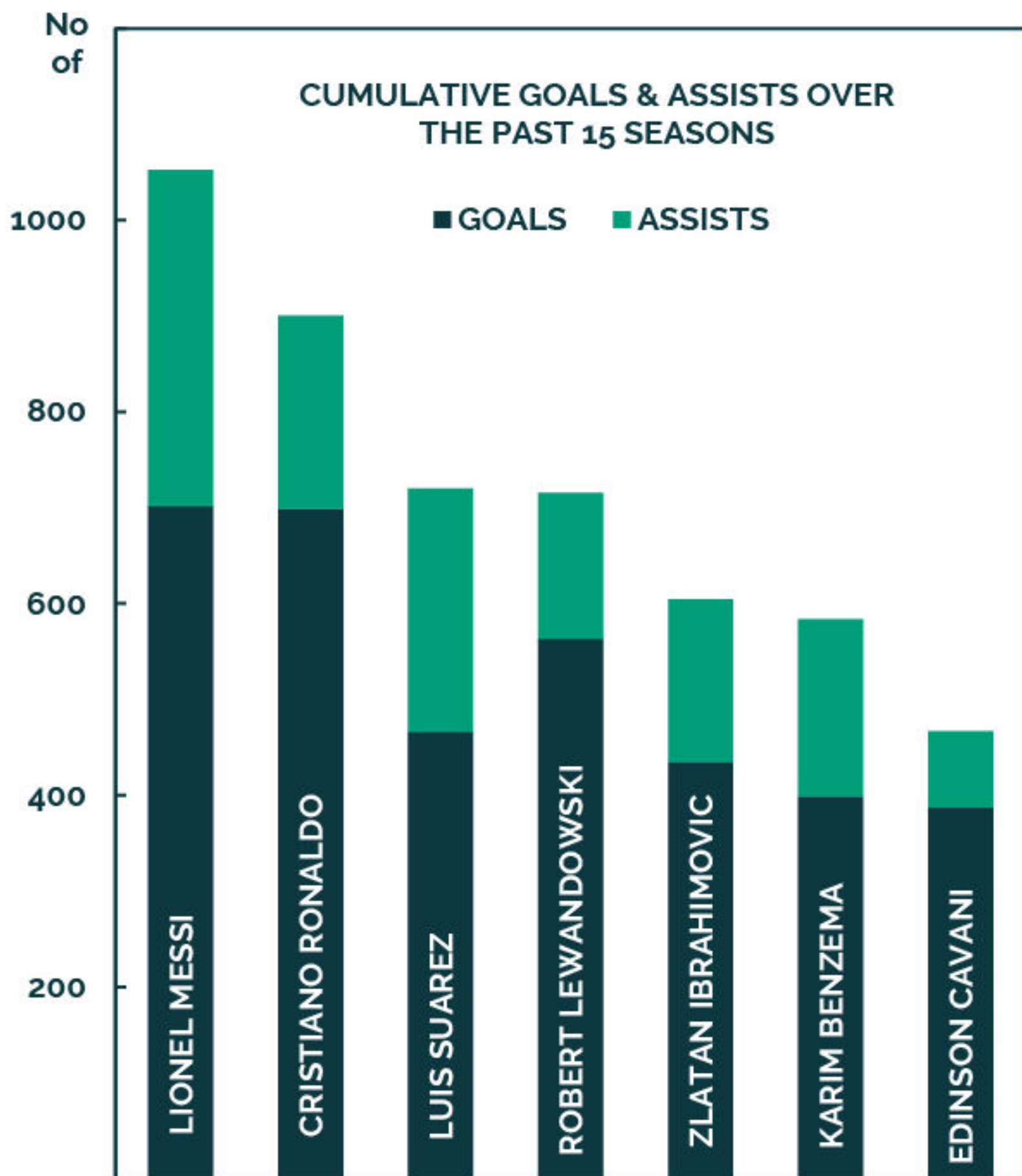
PORTUGAL: SHARE OF PLAYERS IN THE TOP 5 LEAGUES

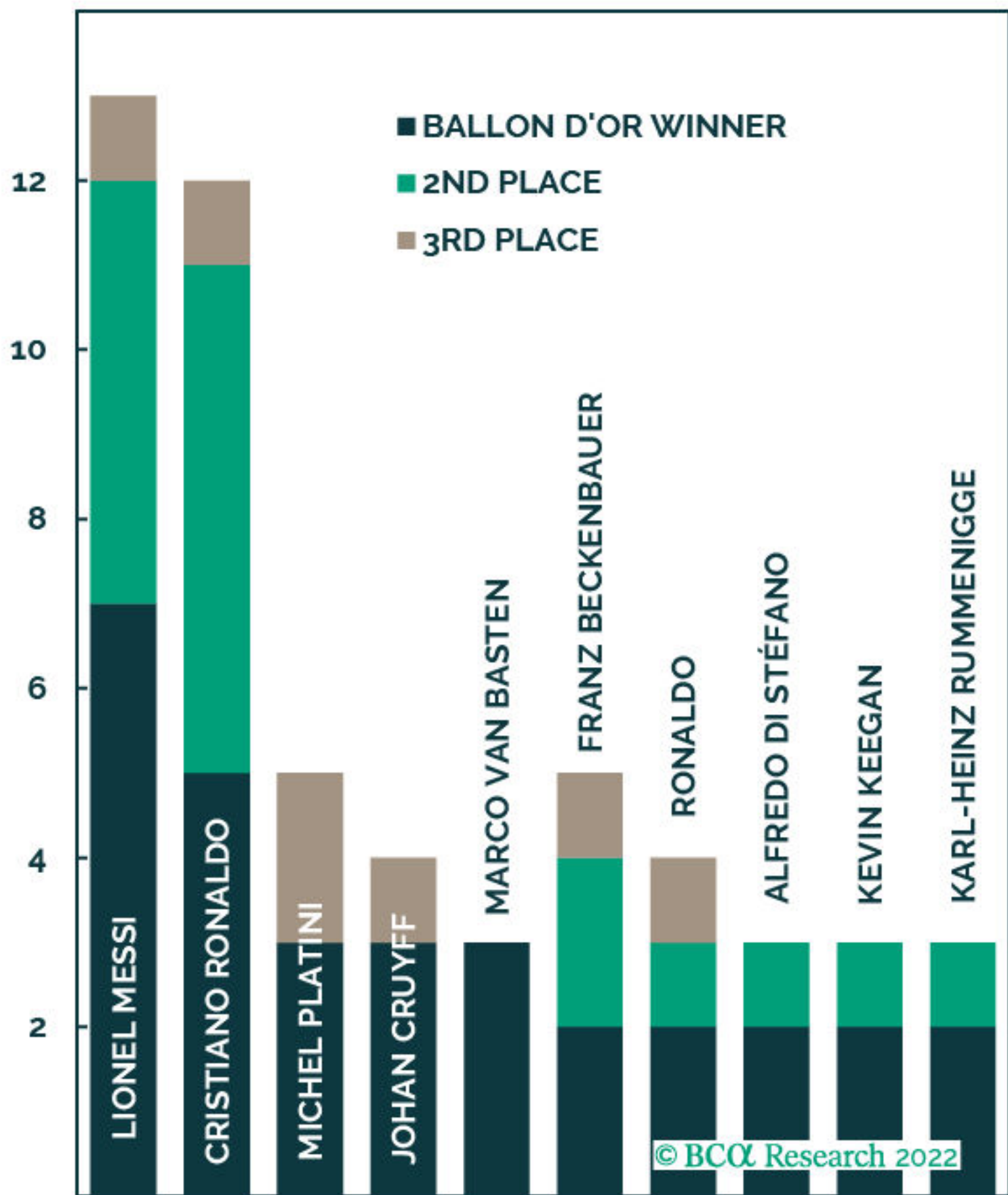


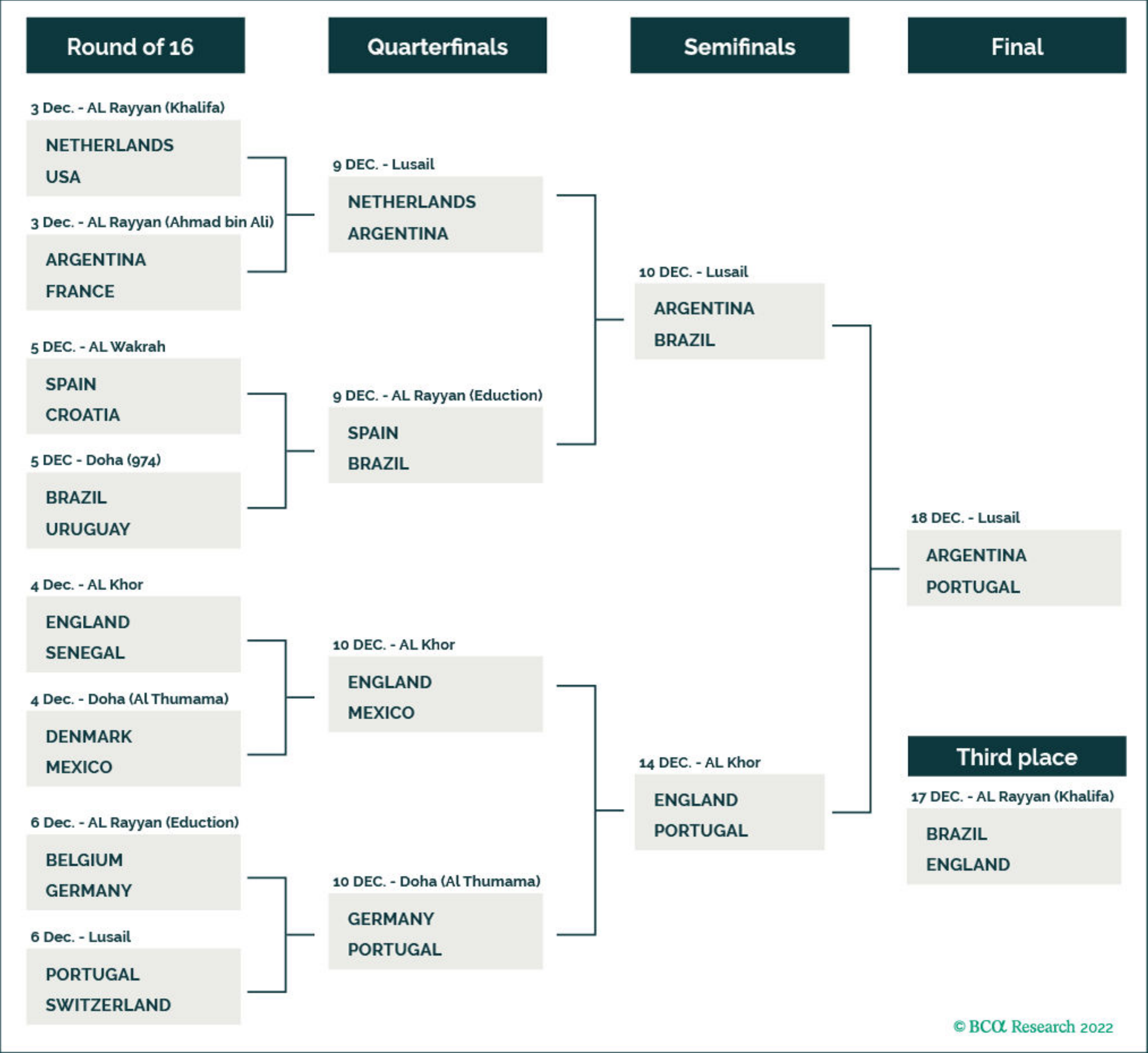
TEAM	PROBABILITY OF WINNING	CONDITIONAL PROBABILITY OF PASSING TO THE NEXT STAGE	OPPONENT
PORTUGAL	56%	23%	ENGLAND
ARGENTINA	55%	13%	BRAZIL
BRAZIL	45%	16%	ARGENTINA
ENGLAND	44%	32%	PORTUGAL

		BRAZIL EXPECTED GOALS				
		0	1	2	3	4
ARGENTINA EXPECTED GOALS	0	20%	14%	5%	1%	0%
	1	18%	13%	5%	1%	0%
	2	8%	6%	2%	0%	0%
	3	2%	2%	1%	0%	0%
	4	1%	0%	0%	0%	0%

		PORTUGAL EXPECTED GOALS				
		0	1	2	3	4
ENGLAND EXPECTED GOALS	0	9%	12%	8%	3%	1%
	1	10%	13%	9%	4%	1%
	2	5%	7%	5%	2%	1%
	3	2%	3%	2%	1%	0%
	4	1%	1%	0%	0%	0%







TEAM	PROBABILITY OF WINNING
PORTUGAL	50%
ARGENTINA	50%

**ARGENTINA EXPECTED
GOALS**

PORTUGAL EXPECTED GOALS

	0	1	2	3	4
0	17%	15%	6%	2%	0%
1	16%	13%	6%	2%	0%
2	7%	6%	3%	1%	0%
3	2%	2%	1%	0%	0%
4	1%	0%	0%	0%	0%

TEAM	PROBABILITY OF WINNING
BRAZIL	51%
ENGLAND	49%

PROBABILITY OF WINNING THE WORLD CUP IMPLIED BY:

■ BETTING ODDS

■ BCA MODEL

15%

10%

5%

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BRAZIL

FRANCE*

ENGLAND

SPAIN

GERMANY

ARGENTINA

BELGIUM

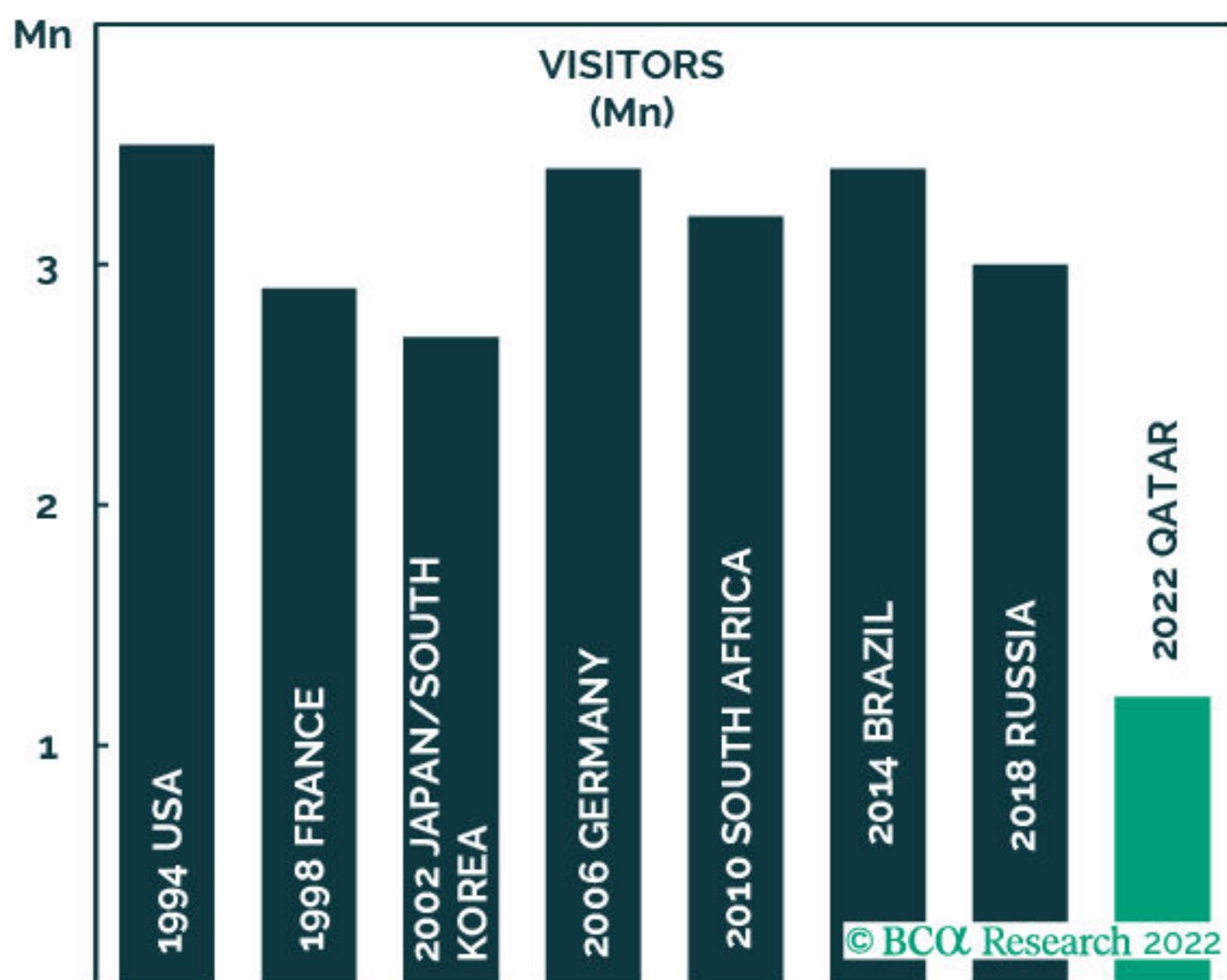
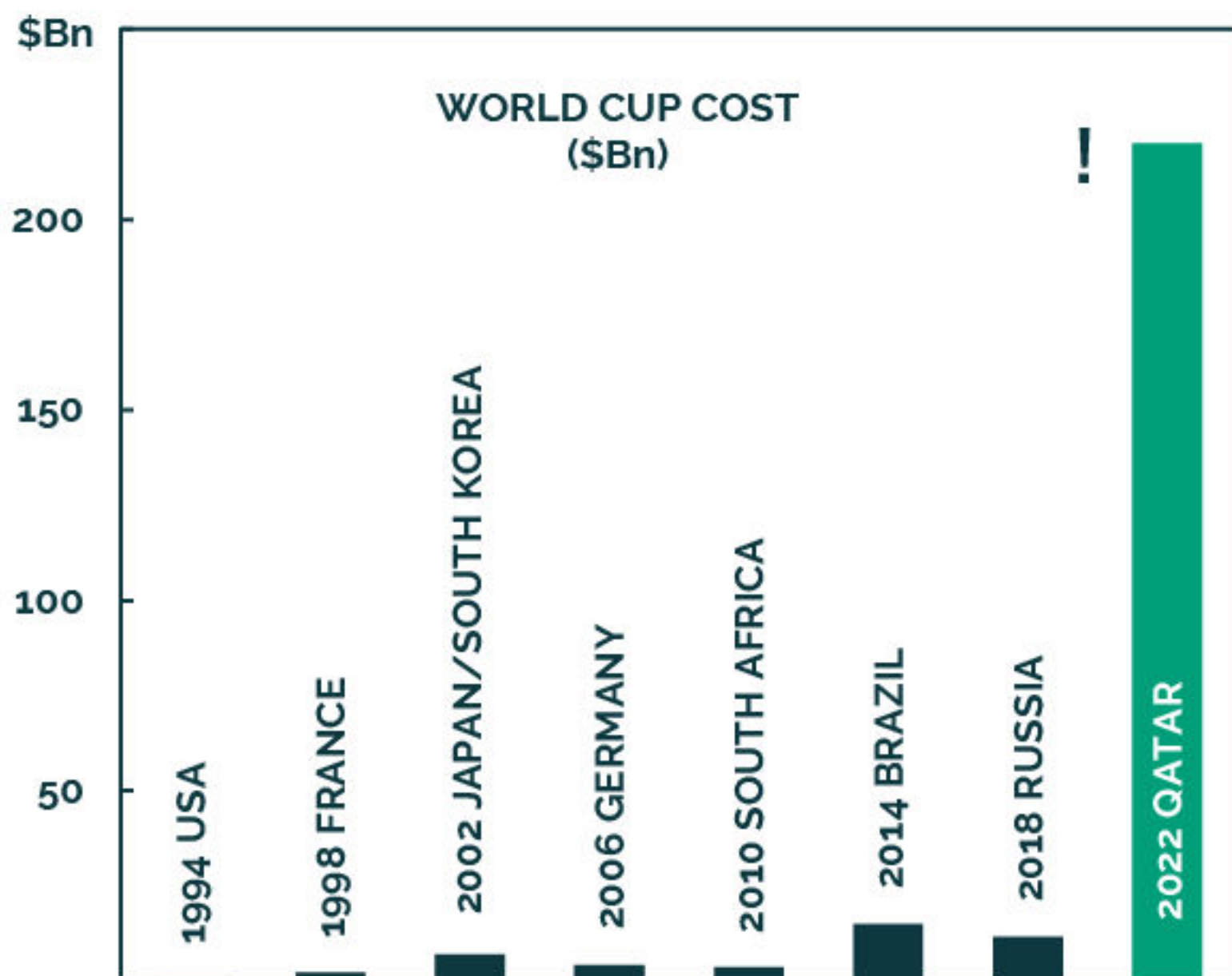
PORTUGAL

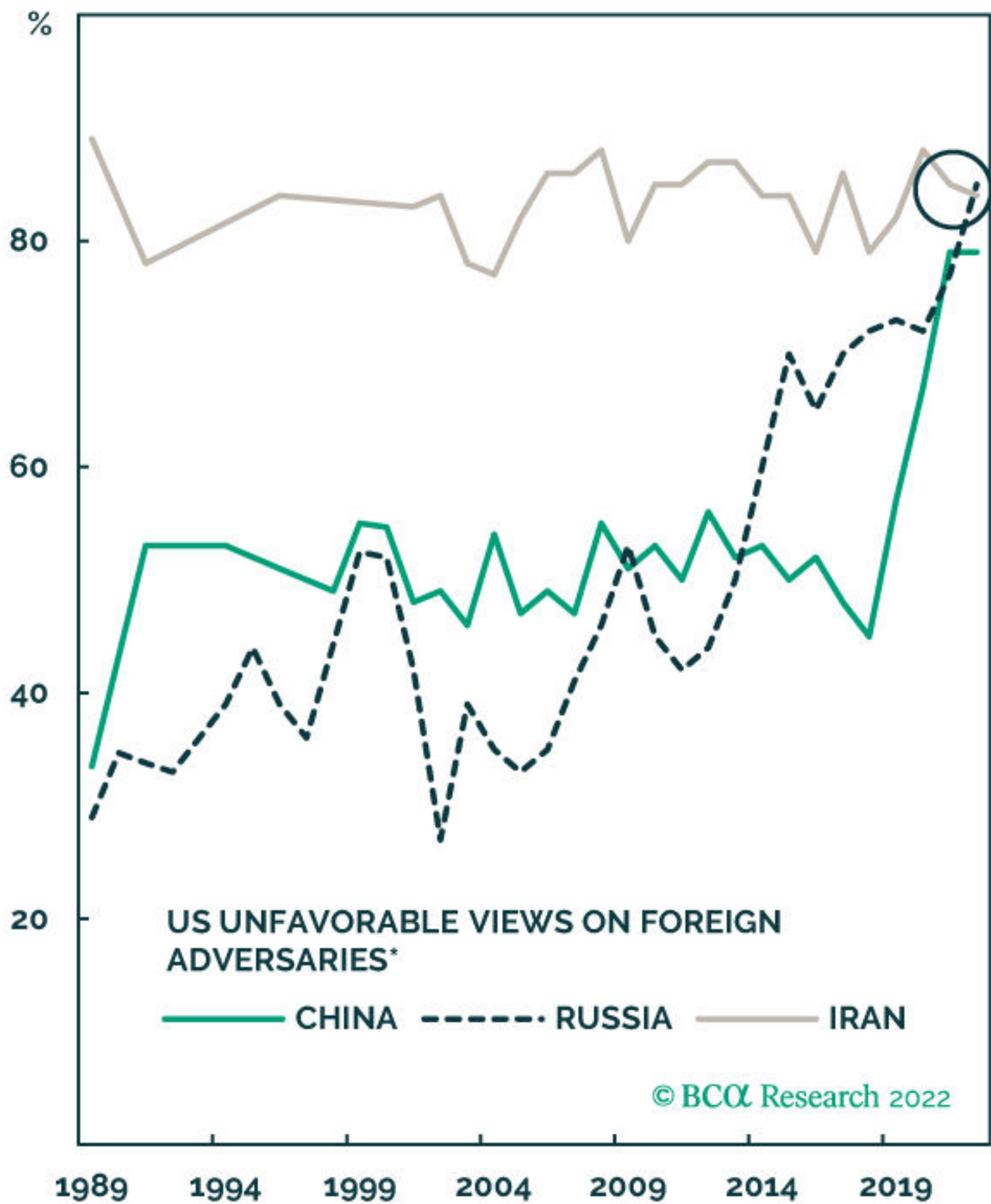
NETHERLANDS

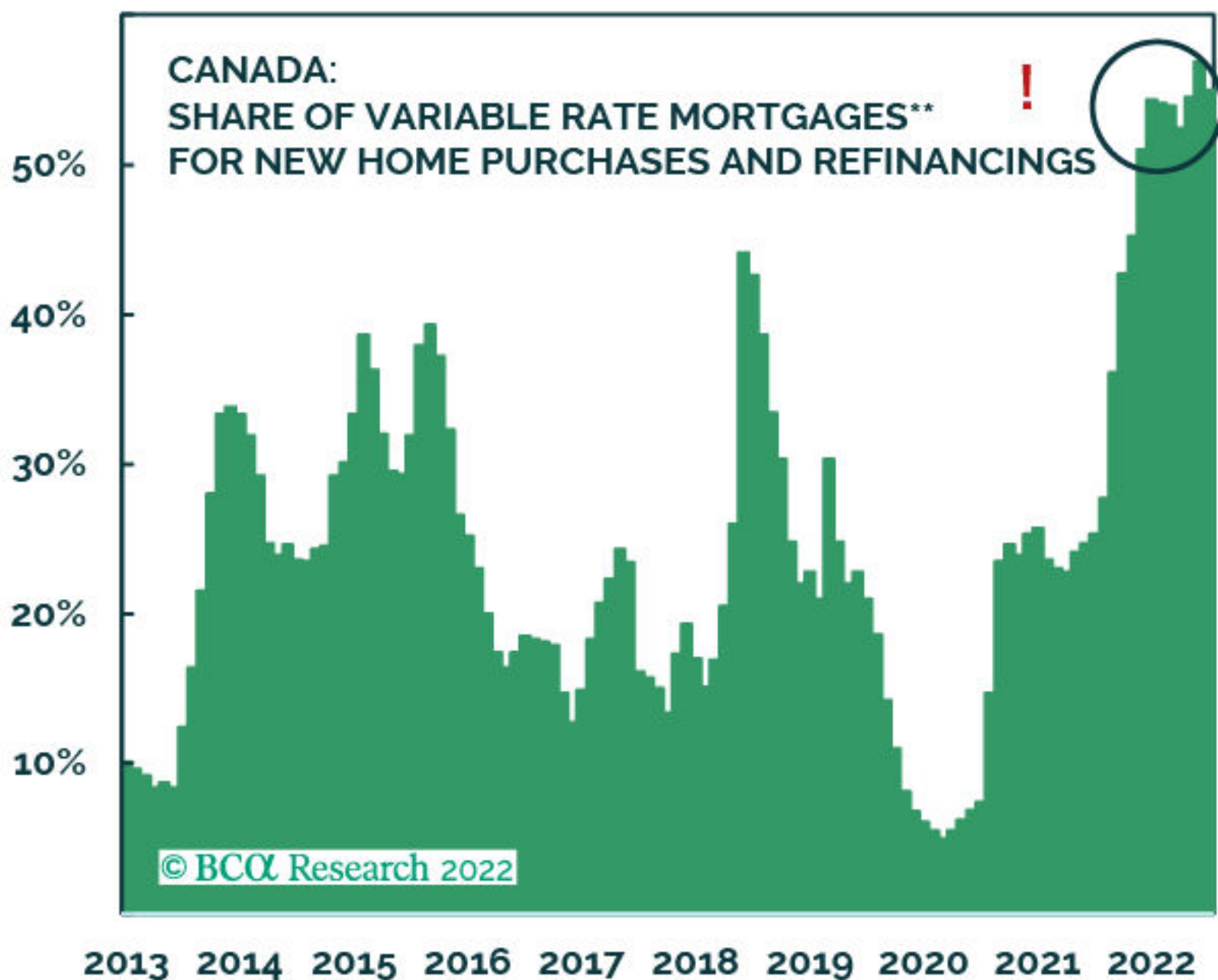
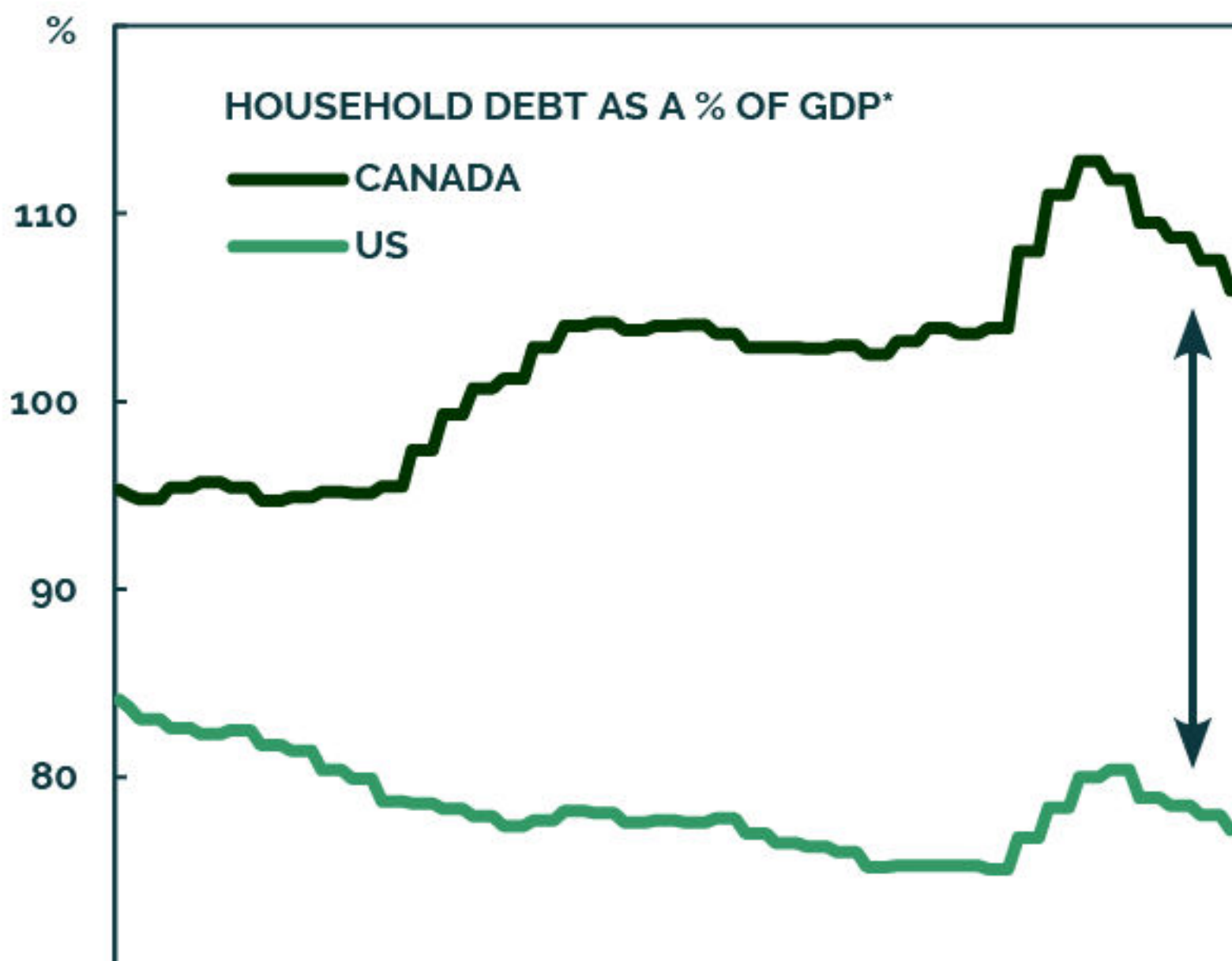
DENMARK

CROATIA



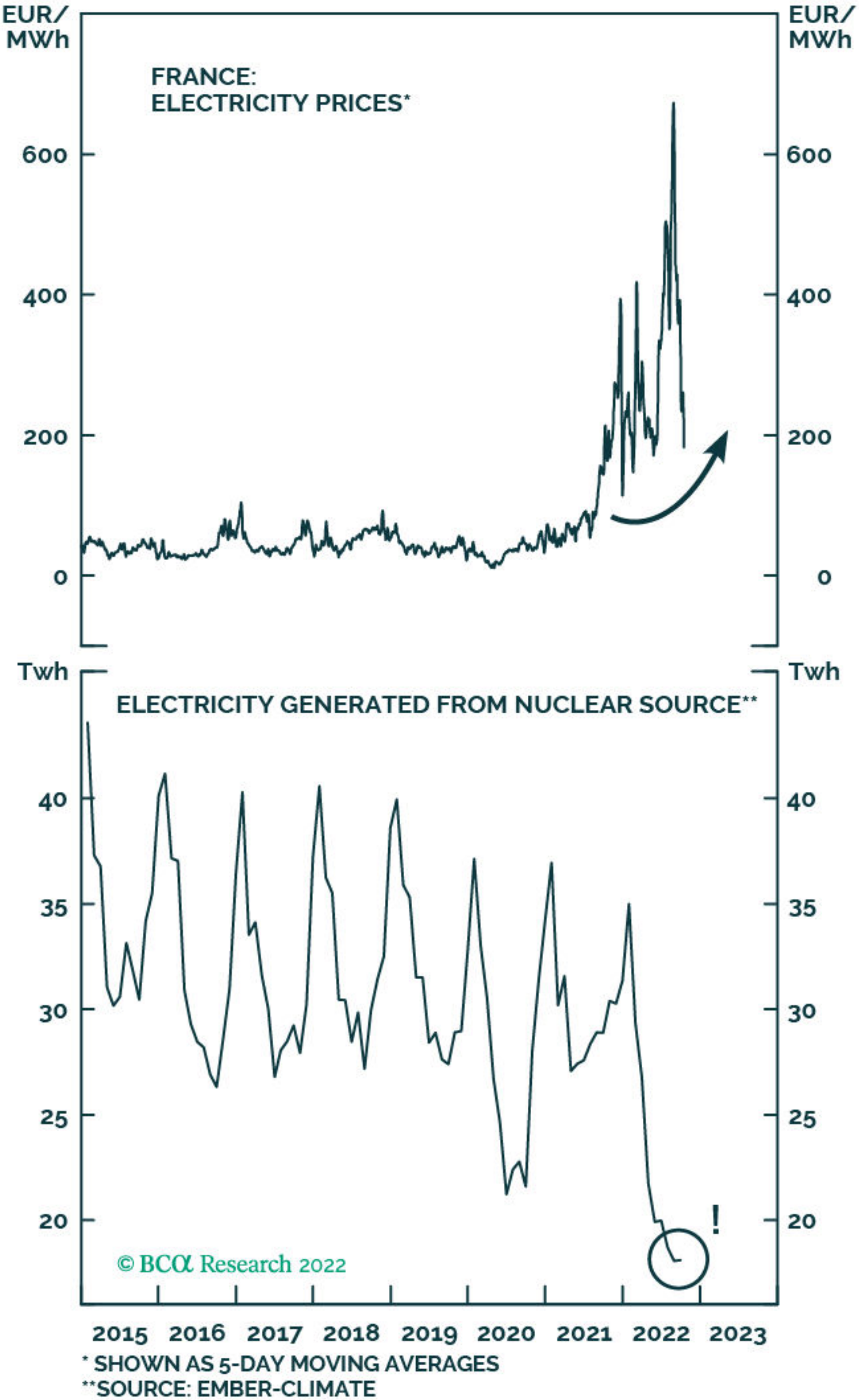


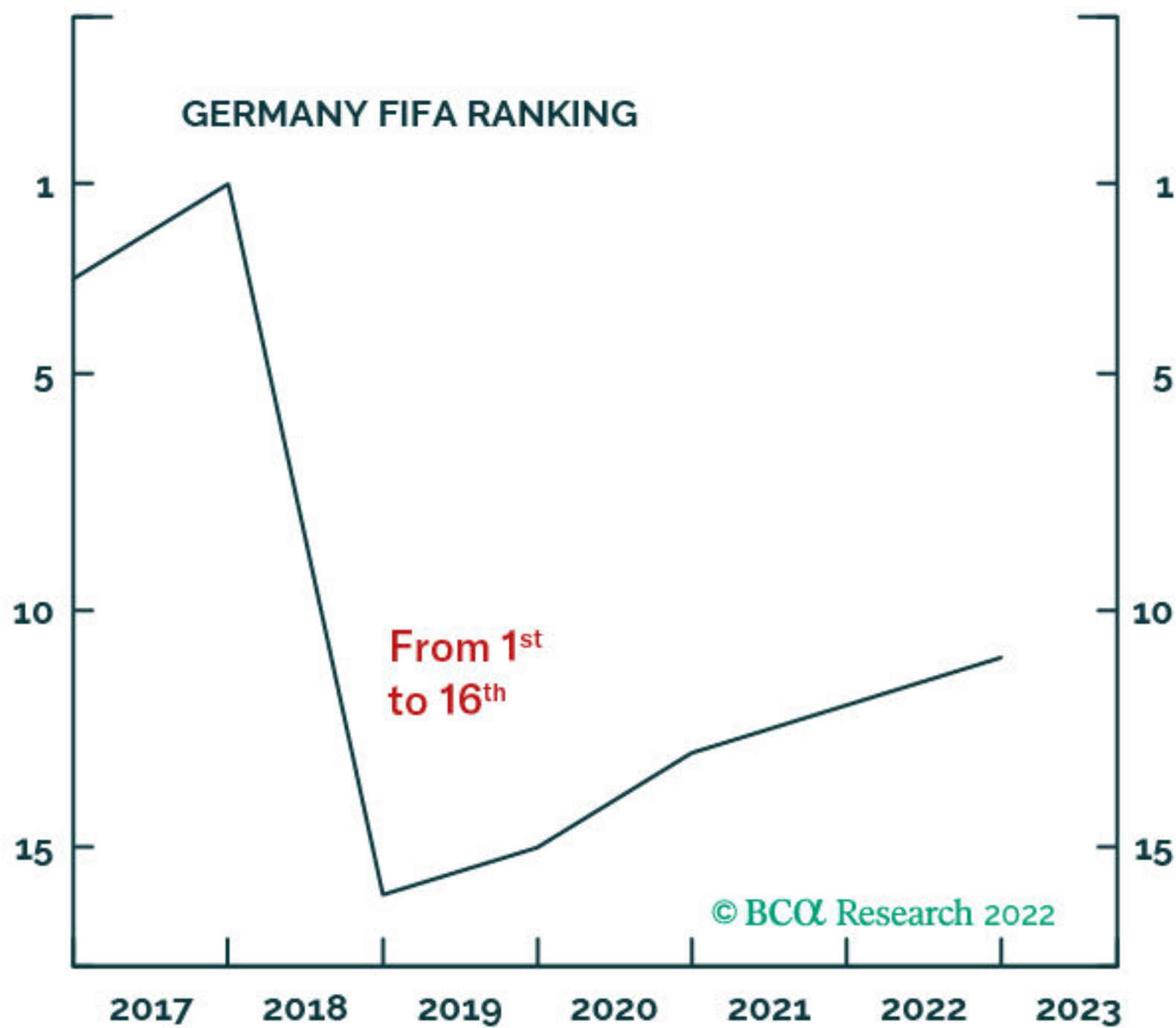
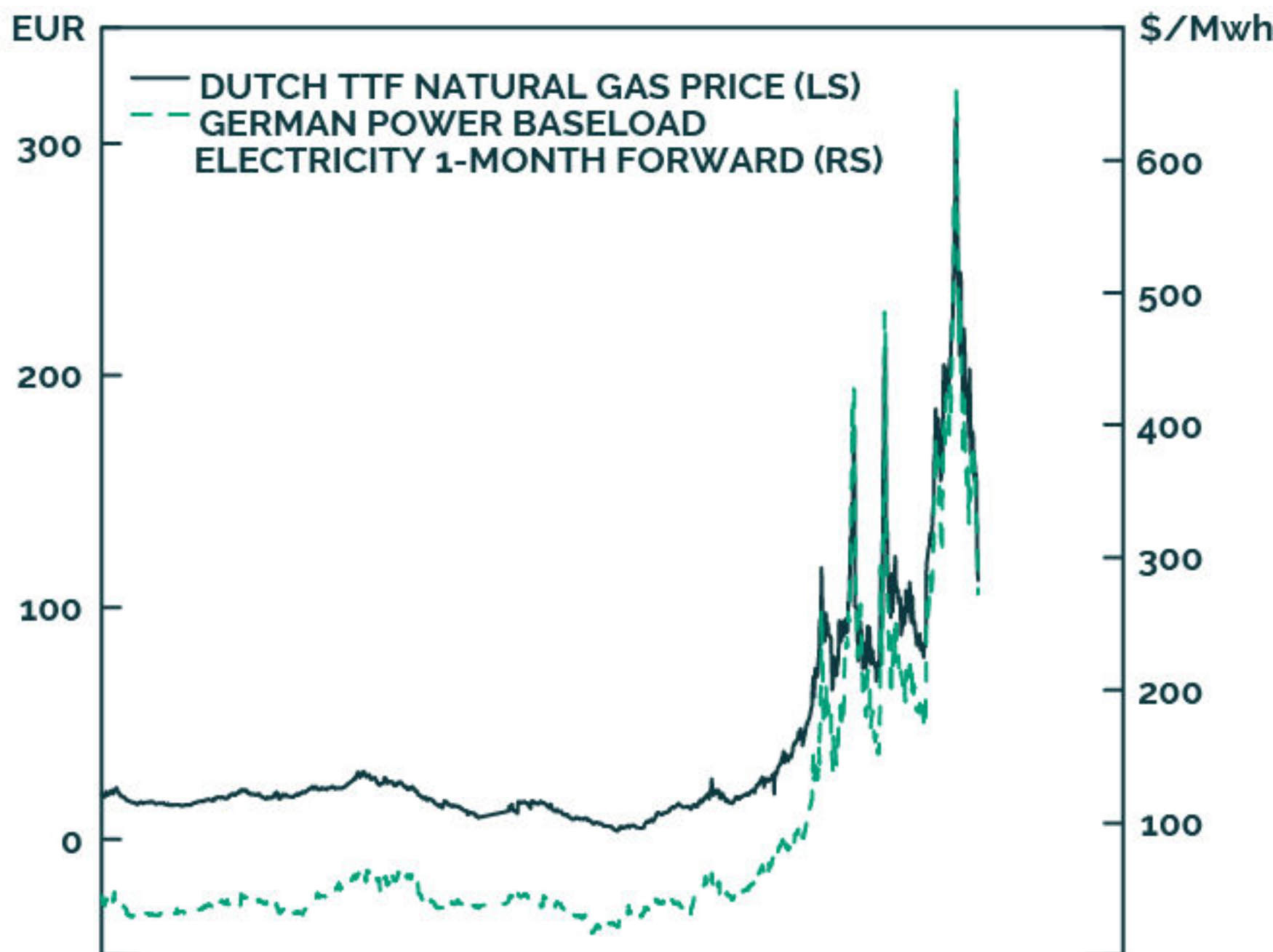


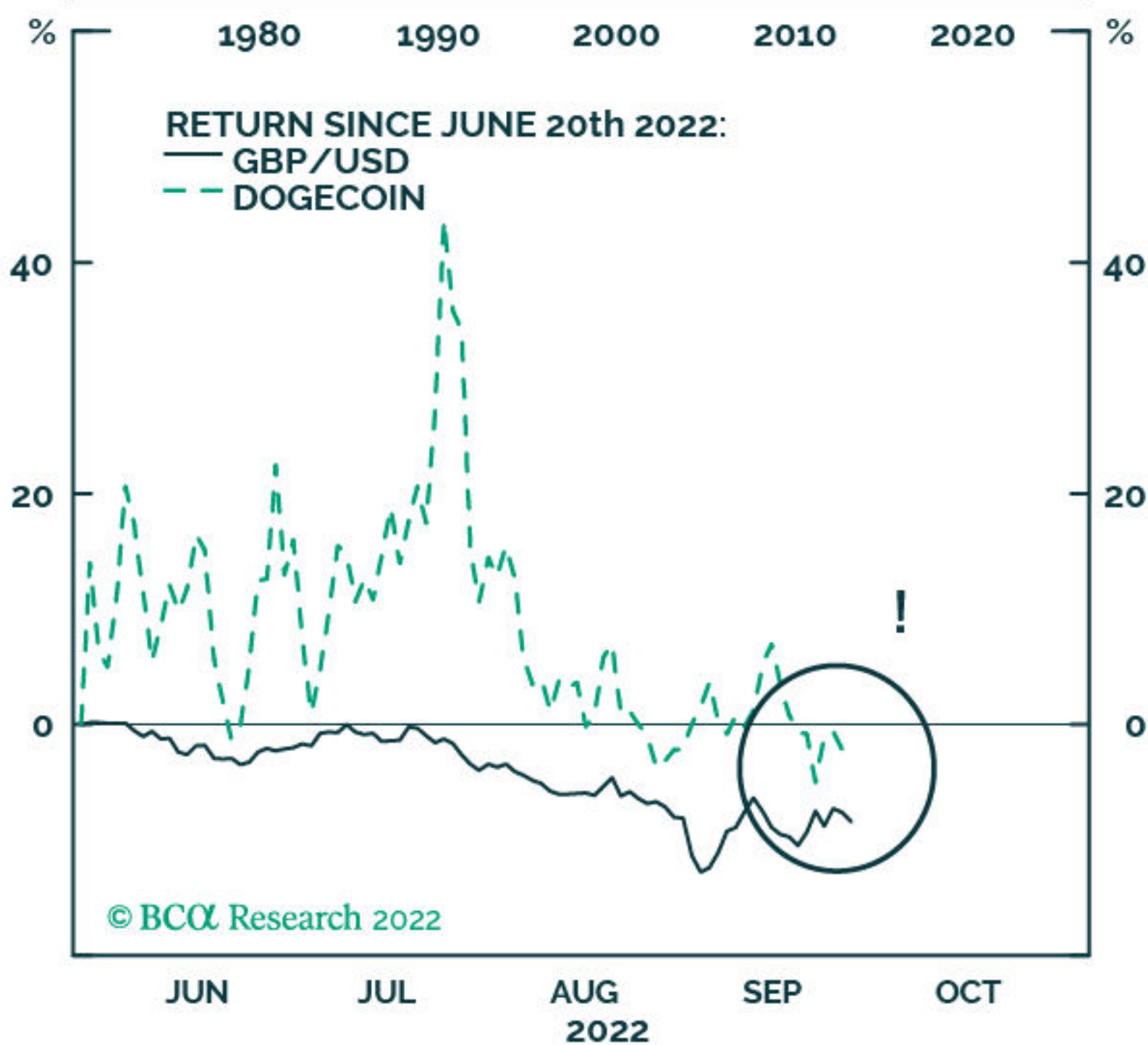
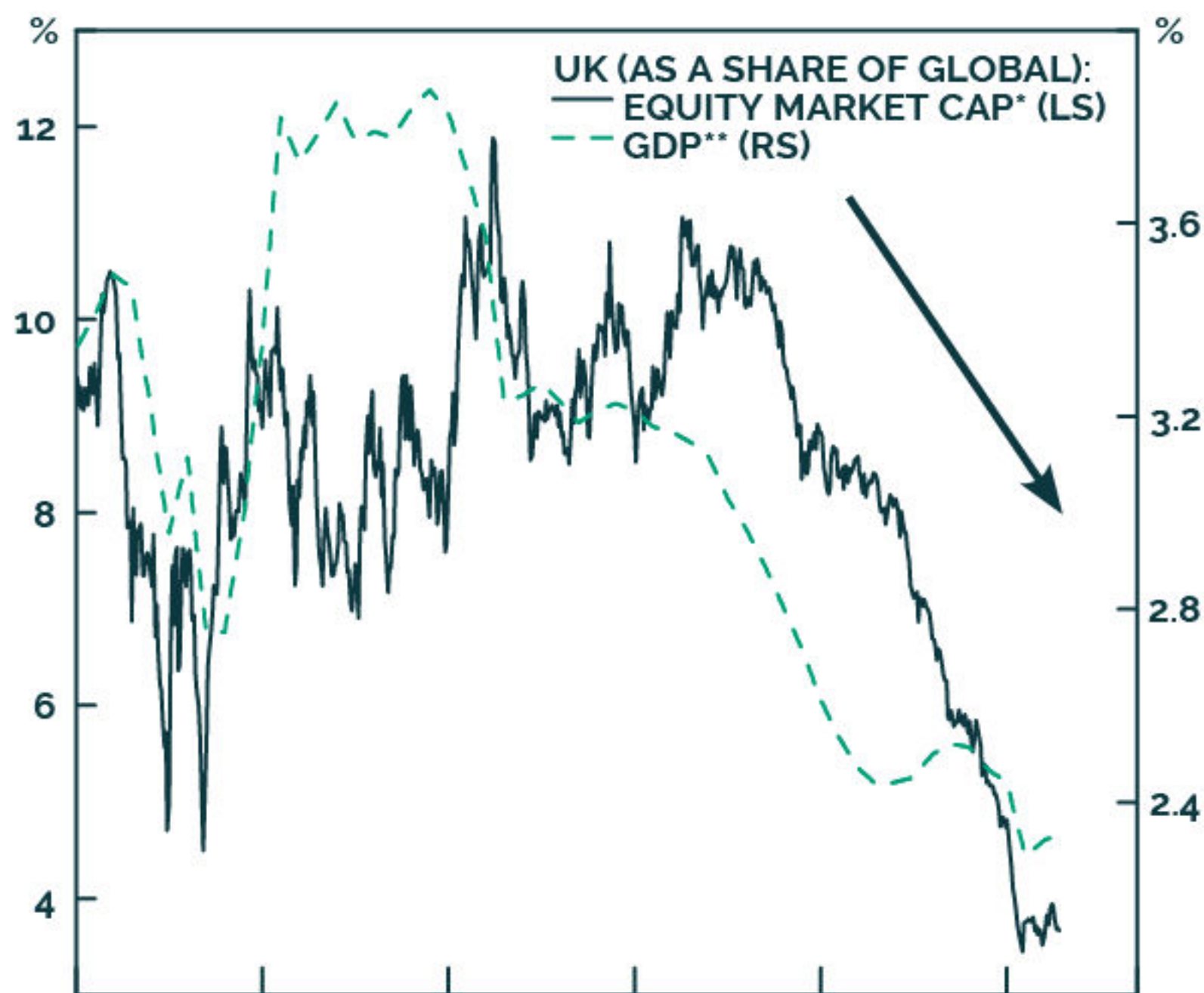


* SOURCE: BANK FOR INTERNATIONAL SETTLEMENTS.

**SOURCE: RESIDENTIAL MORTGAGE INDUSTRY REPORT AND STATISTICS CANADA.

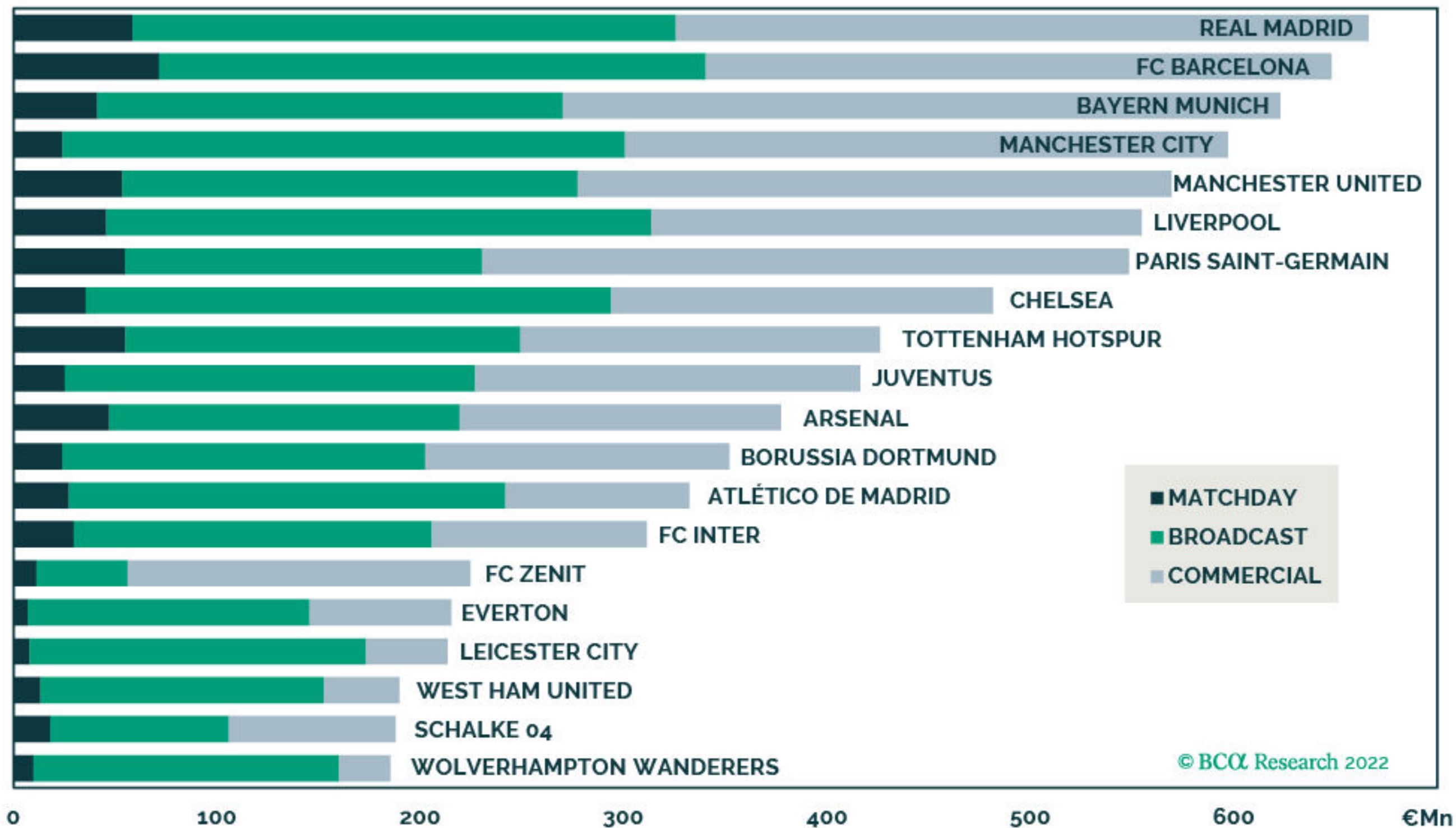






* SOURCE: MSCI Inc. (SEE COPYRIGHT DECLARATION).

**SOURCE: IMF

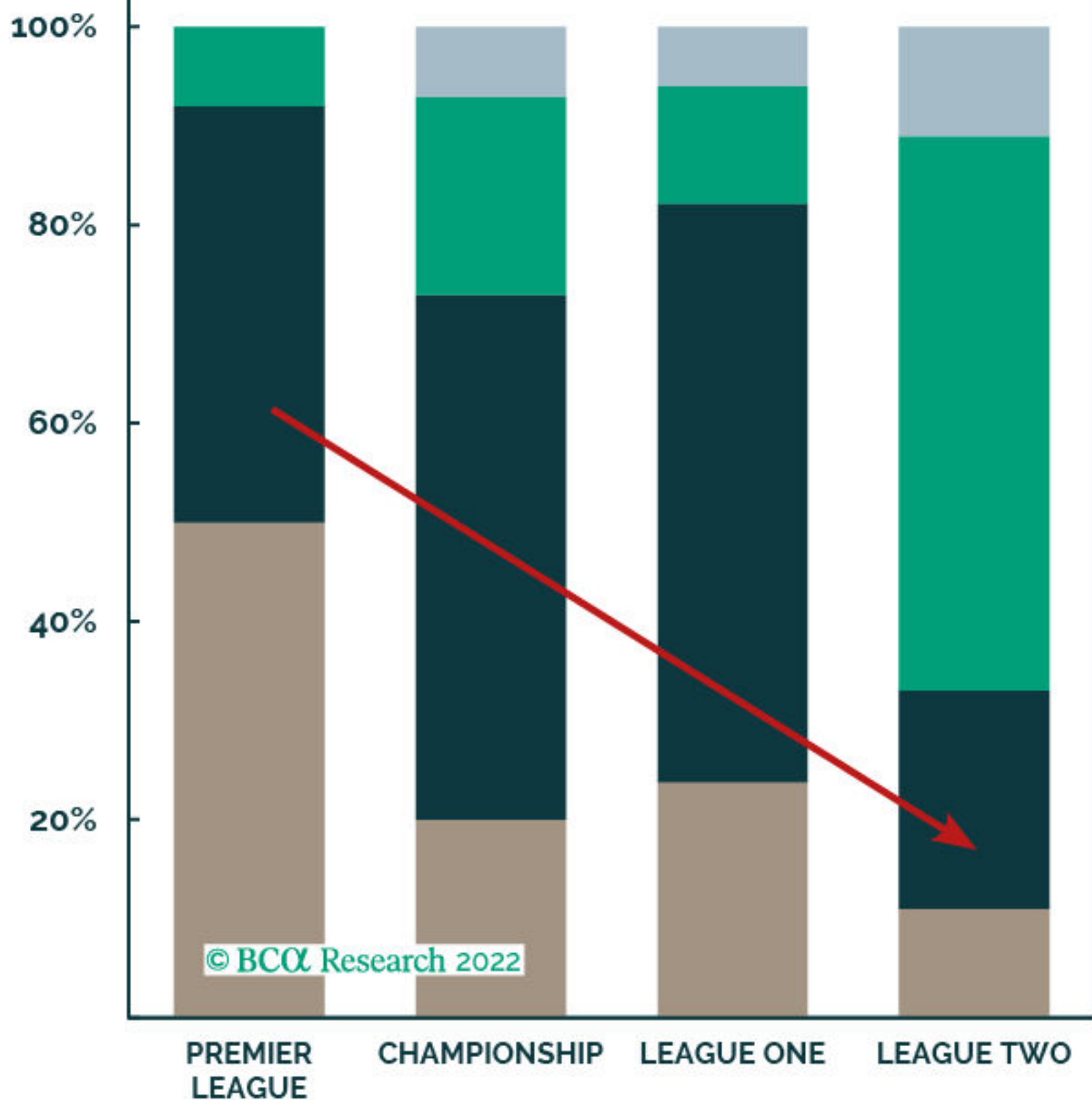


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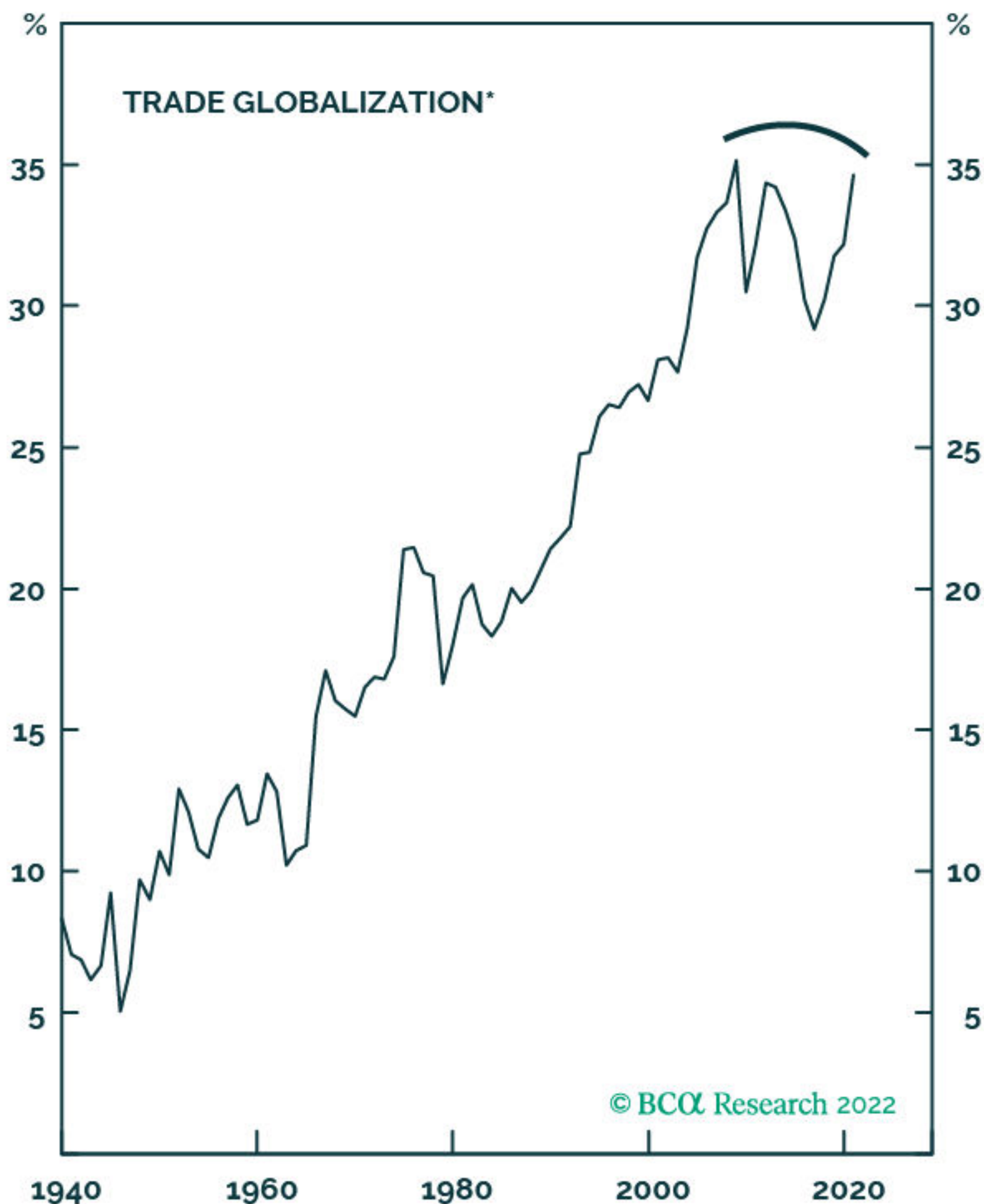
SOURCE: DELOITTE FOOTBALL MONEY LEAGUE 2022.

HOW FINANCE DIRECTORS WOULD DESCRIBE THEIR CLUB'S FINANCES:

- VERY HEALTHY
- ATTENTION NEEDED
- COULD BE BETTER
- A CAUSE FOR CONCERN

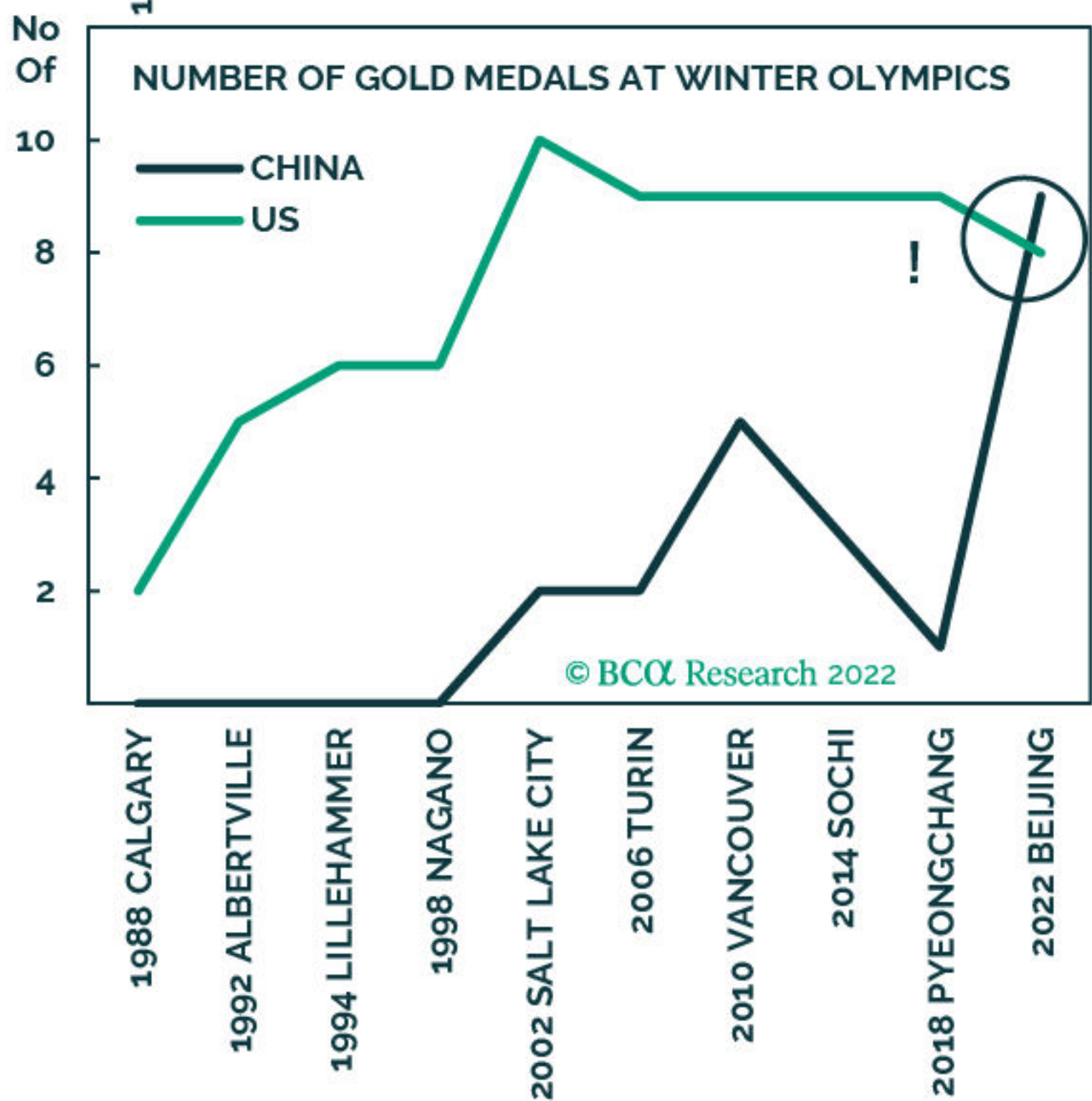
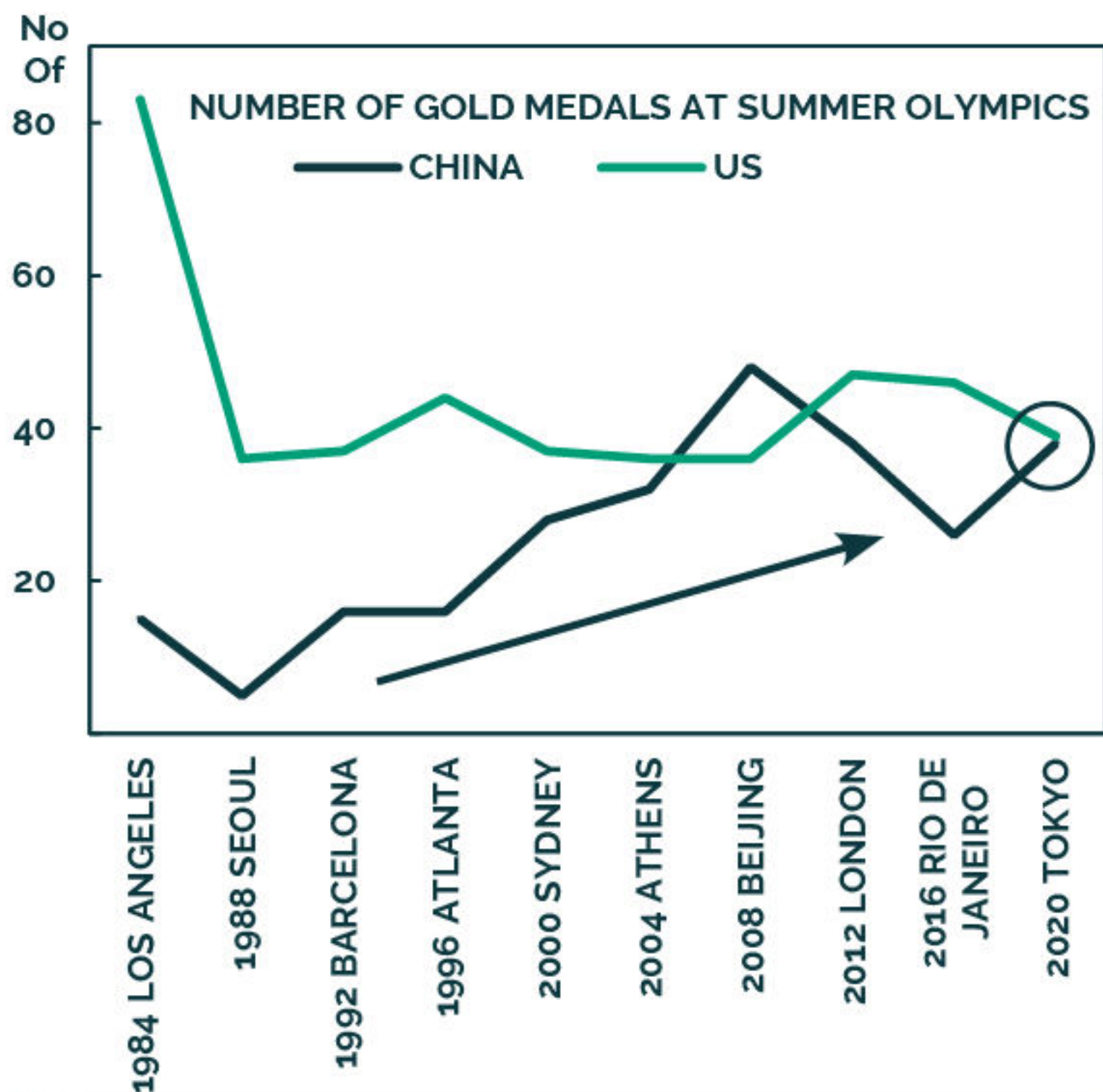


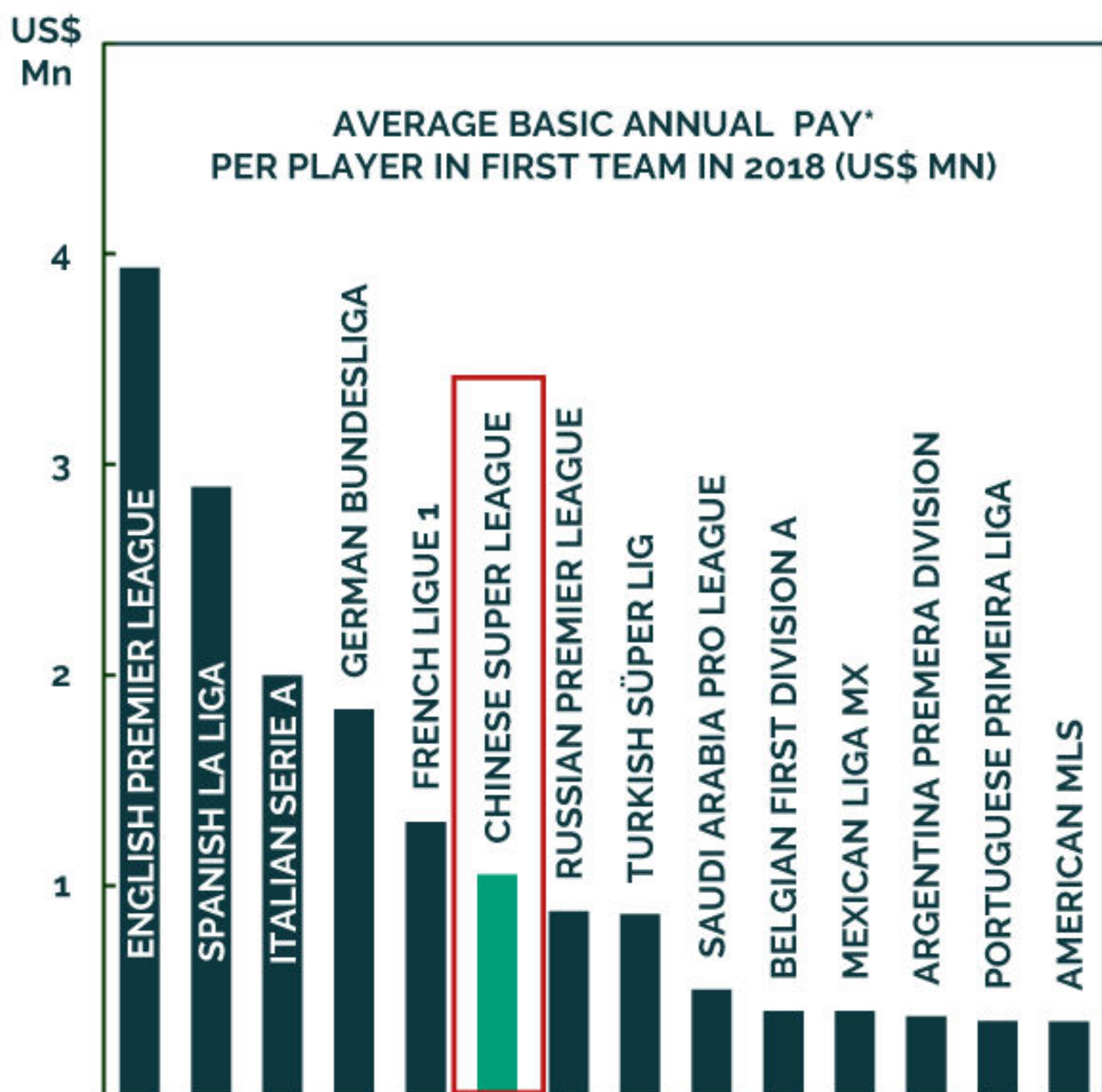
SOURCE: BDO RESEARCH, CONSULTANCY.UK ANALYSIS.



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*MEASURED BY IMPORTS AS A % OF GDP WEIGHTED BY POPULATION.
SOURCE: BCA CALCULATIONS AND CHASE-DUNN C., KAWANO Y.,
AND BREWER B., "TRADE GLOBALIZATION SINCE 1795: WAVES OF
INTEGRATION IN THE WORLD SYSTEM," AMERICAN SOCIOLOGICAL
REVIEW 65 1, 2000.

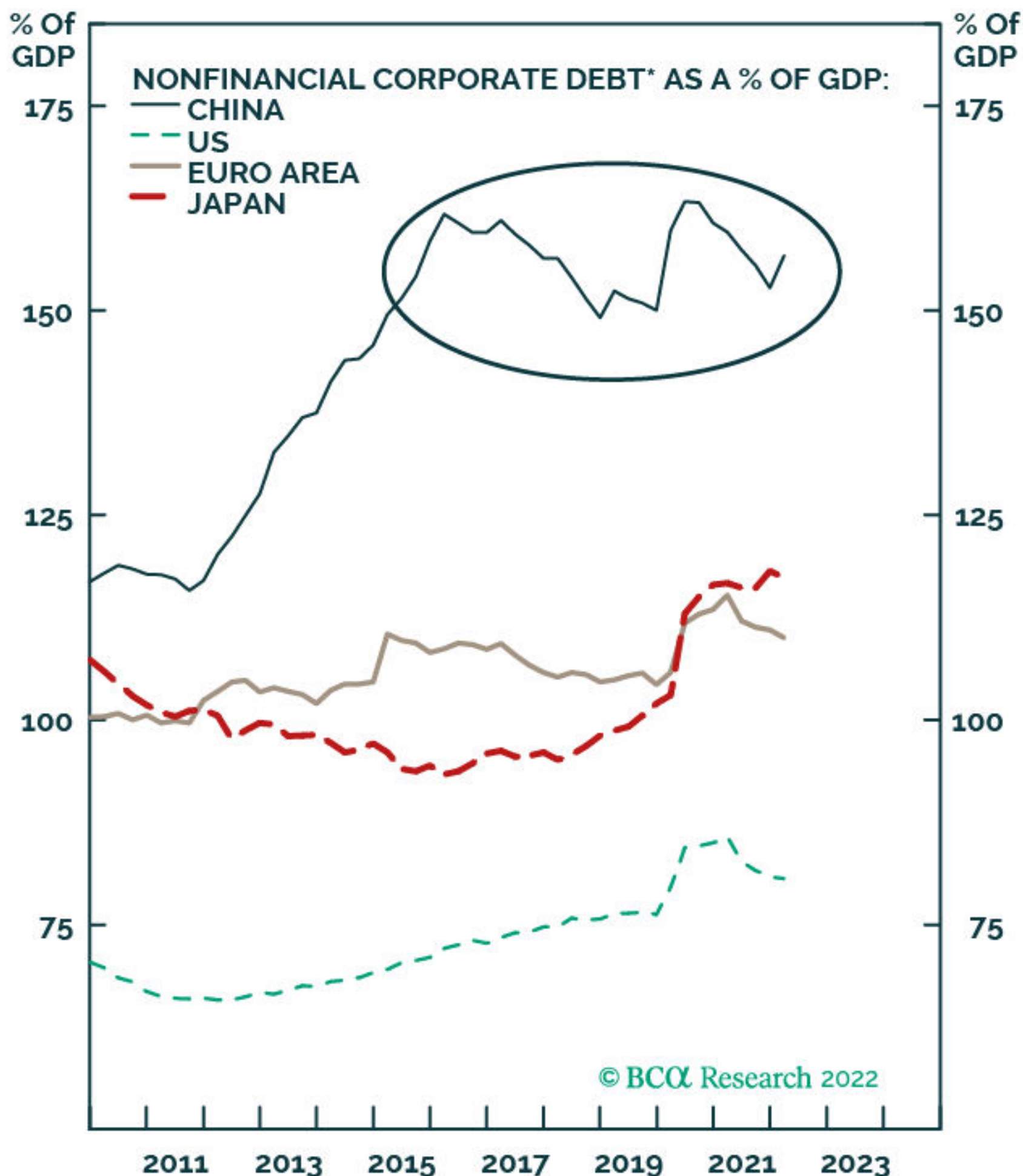




* SOURCE: WWW.SPORTINGINTELLIGENCE.COM

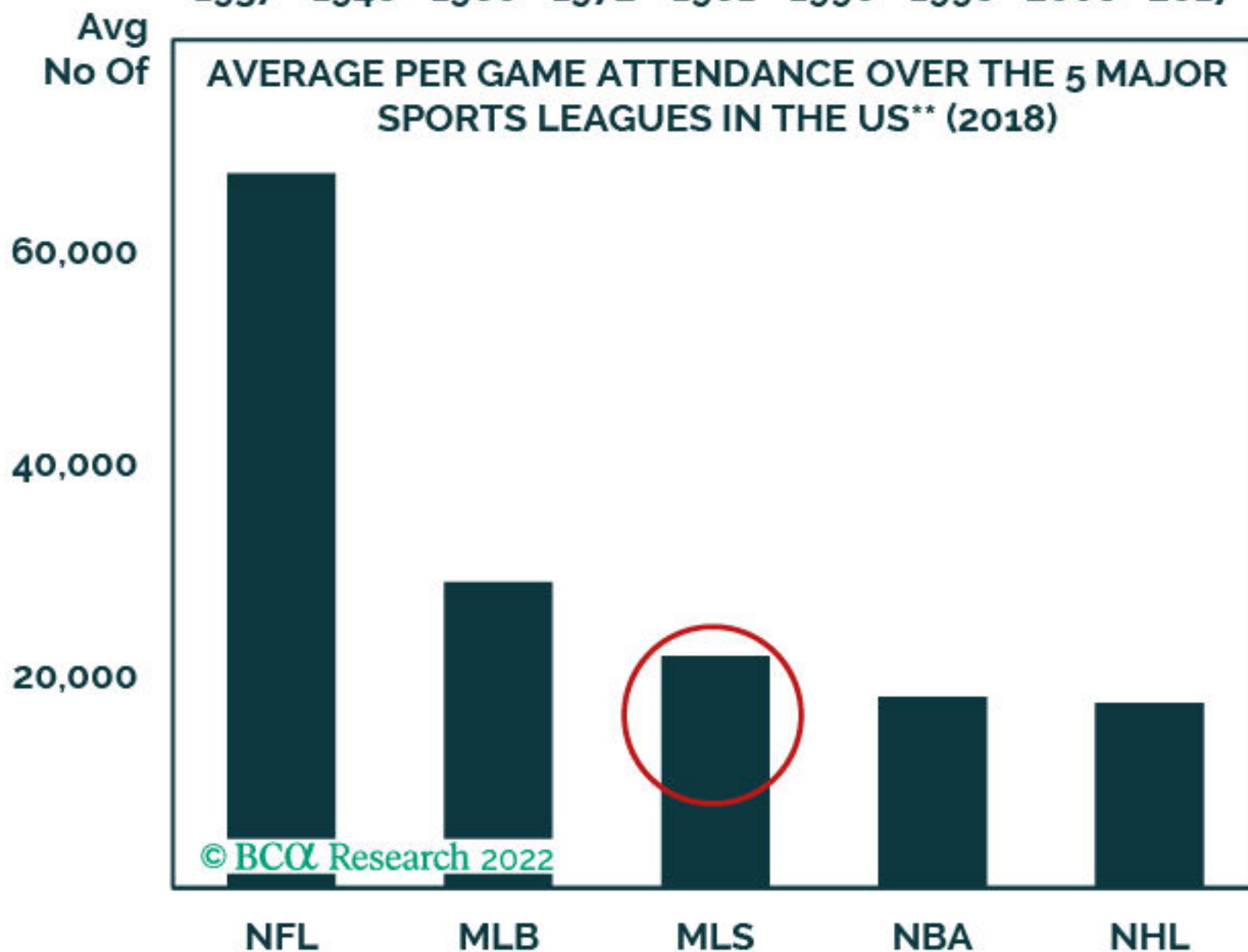
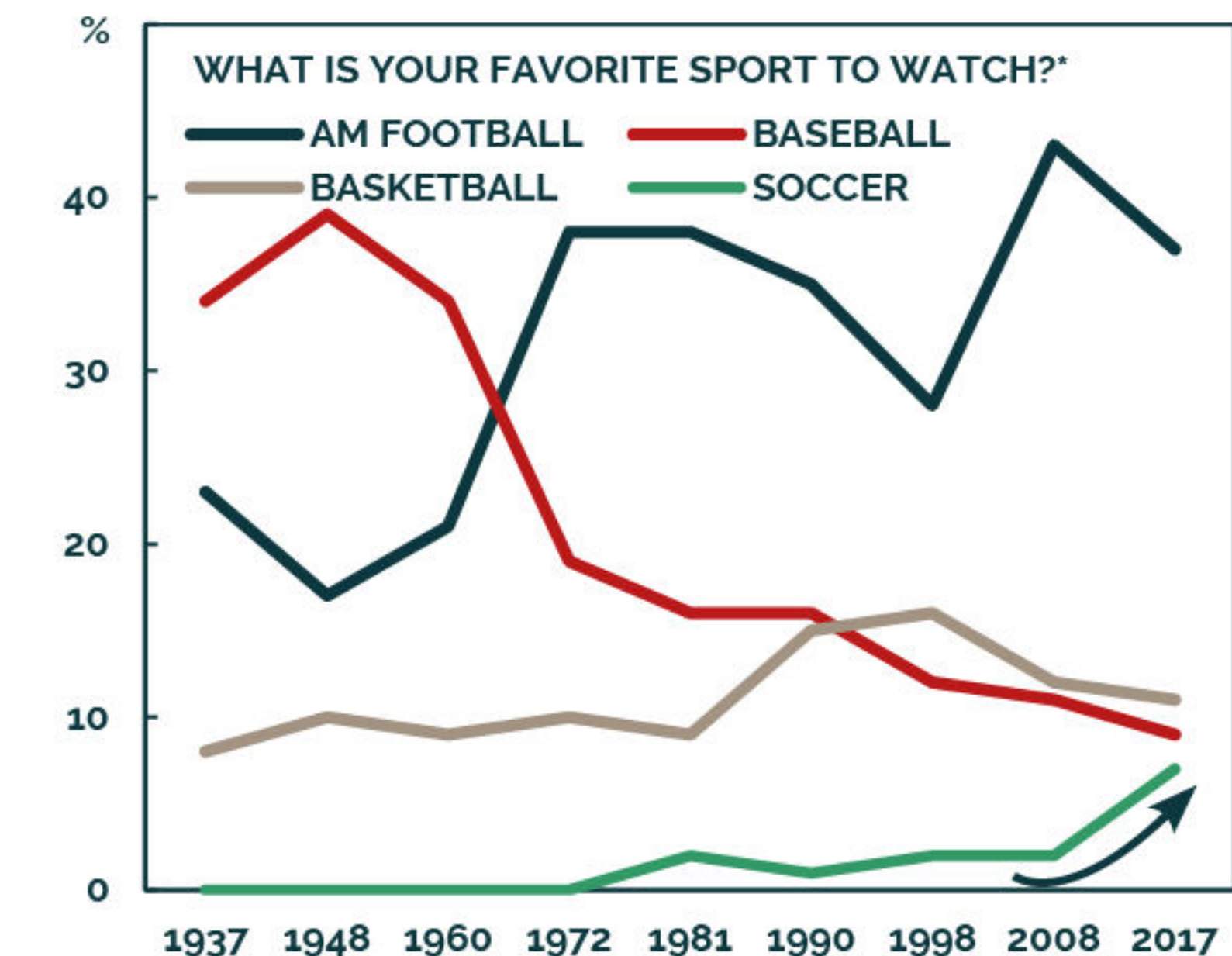
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**SOURCE: FINANCEFOOTBALL.COM



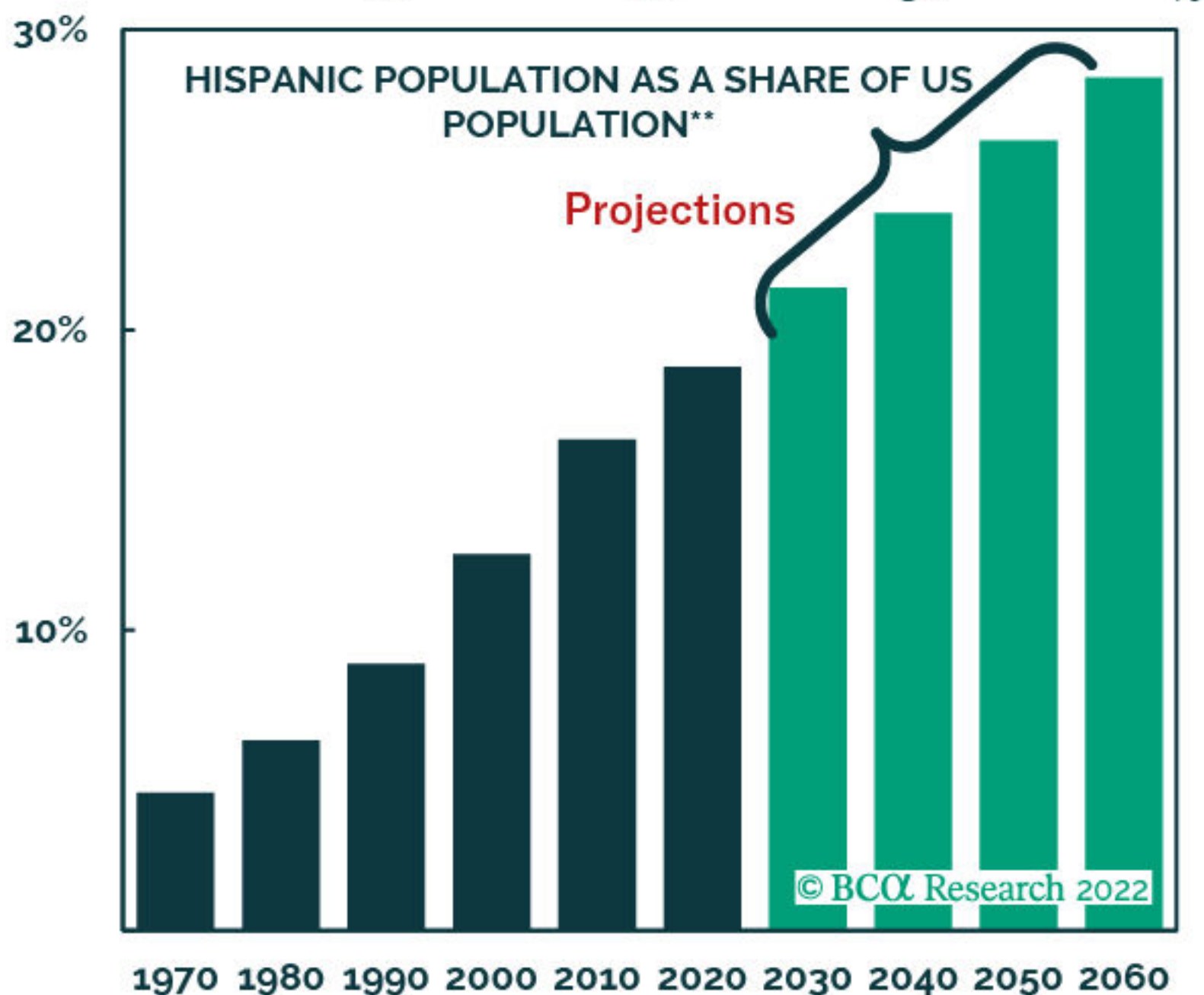
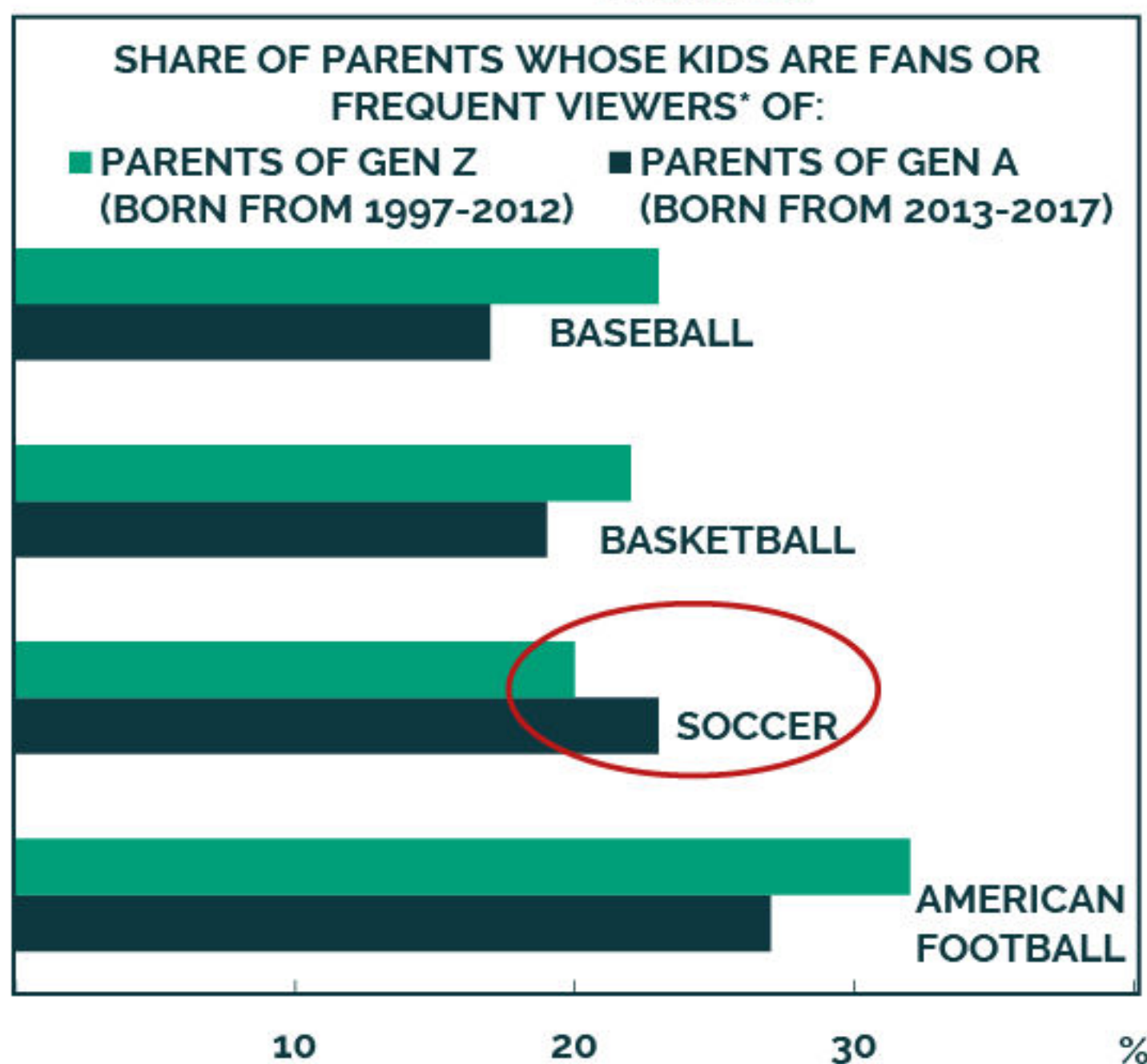
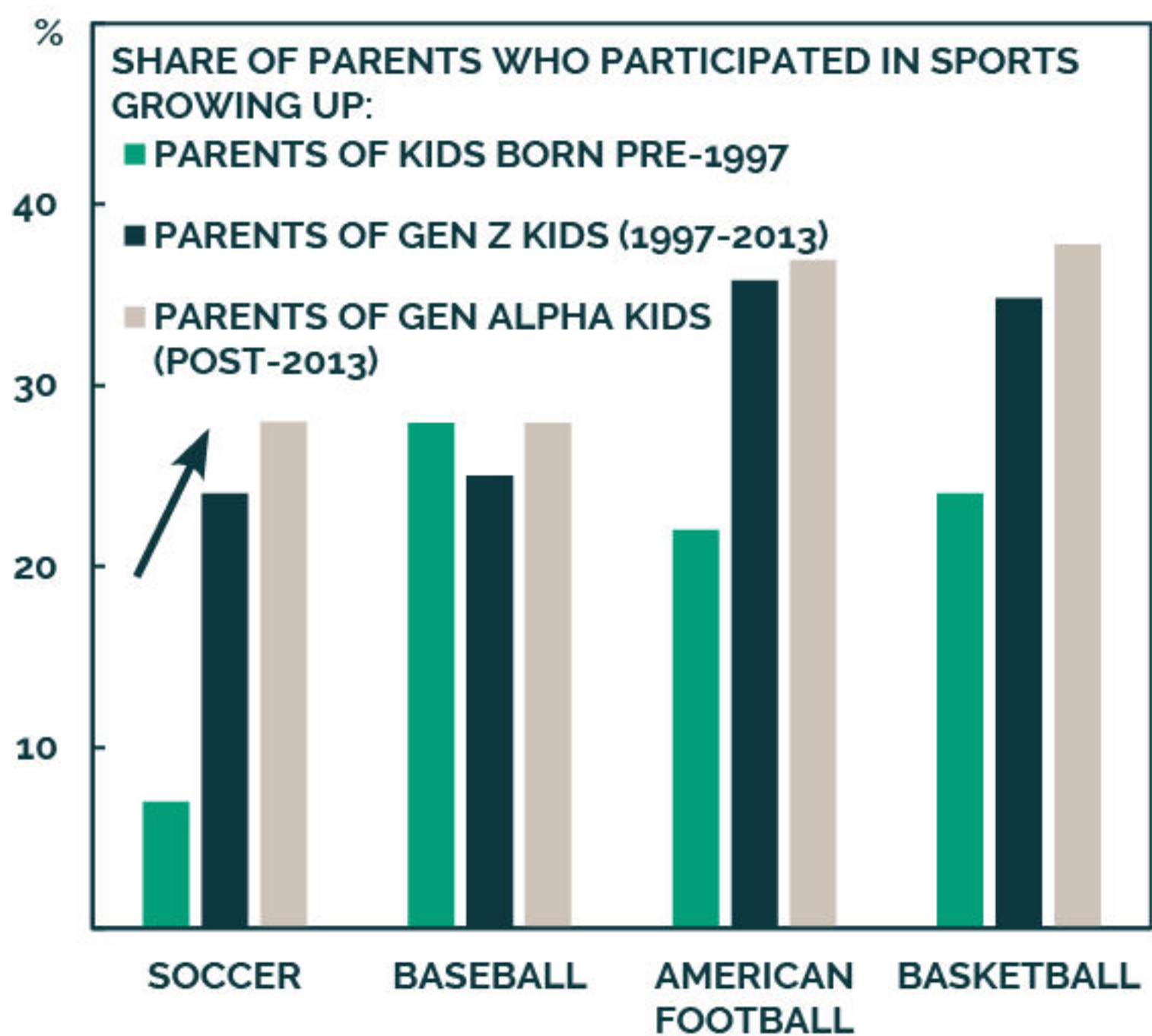
*SOURCE: BANK FOR INTERNATIONAL SETTLEMENTS

CURRENT CLS CLUBS	OWNER(S)	SECTOR
Beijing Guoan	Sinobo Group (64%) and CITIC Group (36%)	Real Estate
Cangzhou Mighty Lions	Everbright Group	Financial
Changchun Yatai	Changchun Jiarun Investment	Financial / Real Estate
Chengdu Rongcheng	Chengdu Better City Investment Group Co., Ltd.	Real Estate
Dalian Pro	Dalian Wanda Group	Real Estate
Guangzhou	Evergrande (60%) and Alibaba (40%)	Real Estate / Cons. Disc.
Guangzhou City	Guangzhou R&F Properties Co., Ltd.	Real Estate
Hebei FC	China Fortune Land Development Co., Ltd	Real Estate
Henan Songshan Longmen	Henan Haolin Investment	Utilities
Meizhou Hakka		
Shandong Taishan	State Grid Corporation of China	Utilities
Shanghai Shenhua	Greenland Group	Real Estate
Shanghai SIPG	Shanghai International Port Group	Transportation
Shenzhen	Kaisa Group	Real Estate
Tianjin Jinmen Tiger	TEDA Investment Holding Co., Ltd.	Real Estate
Wuhan Yangtze River	Wuhan Zall Development Holding Co. Ltd	Financial
Wuhan Three Towns		
Zhejiang	Zhejiang Energy Group (50%) and Greentown China Holdings Limited (50%)	Utilities / Real Estate



* SOURCE: GALLUP.

** SOURCE: WWW.SPORTINGINTELLIGENCE.COM.

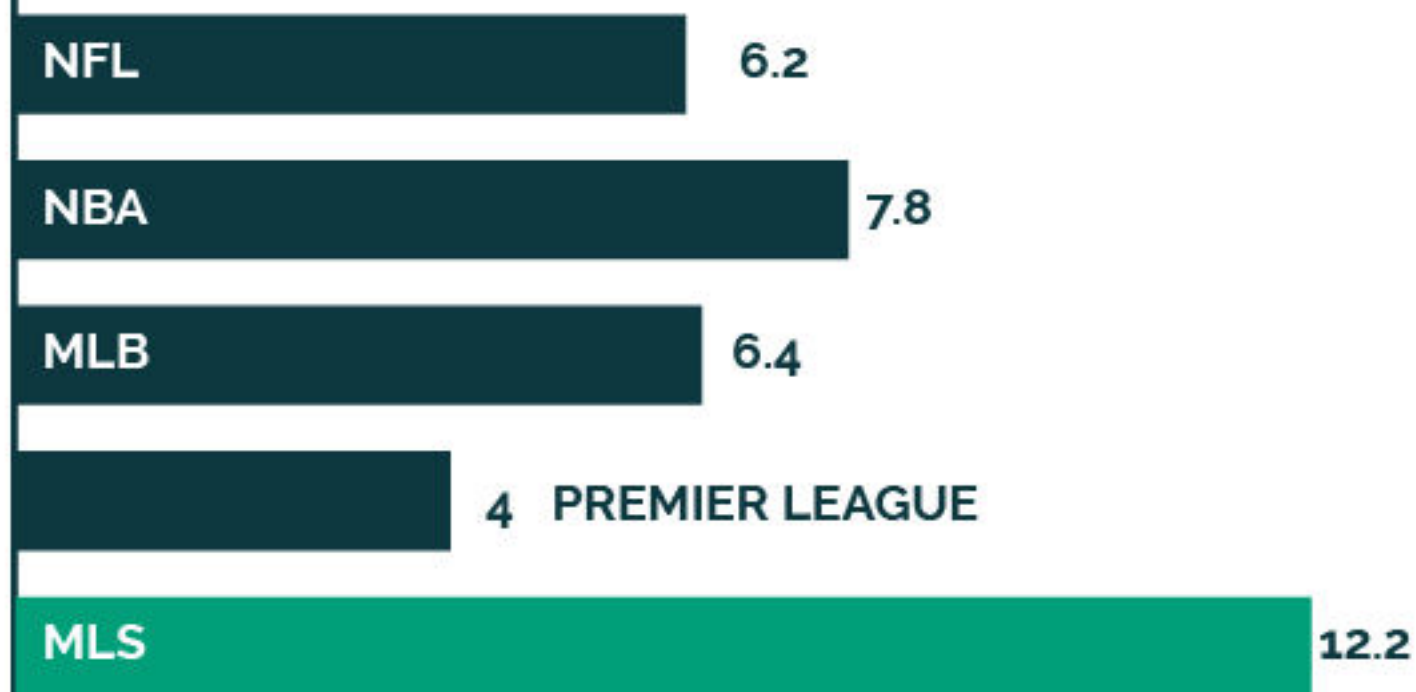


* SOURCE: MORNING CONSULT.

** SOURCE: US CENSUS BUREAU AND PEW RESEARCH CENTER.

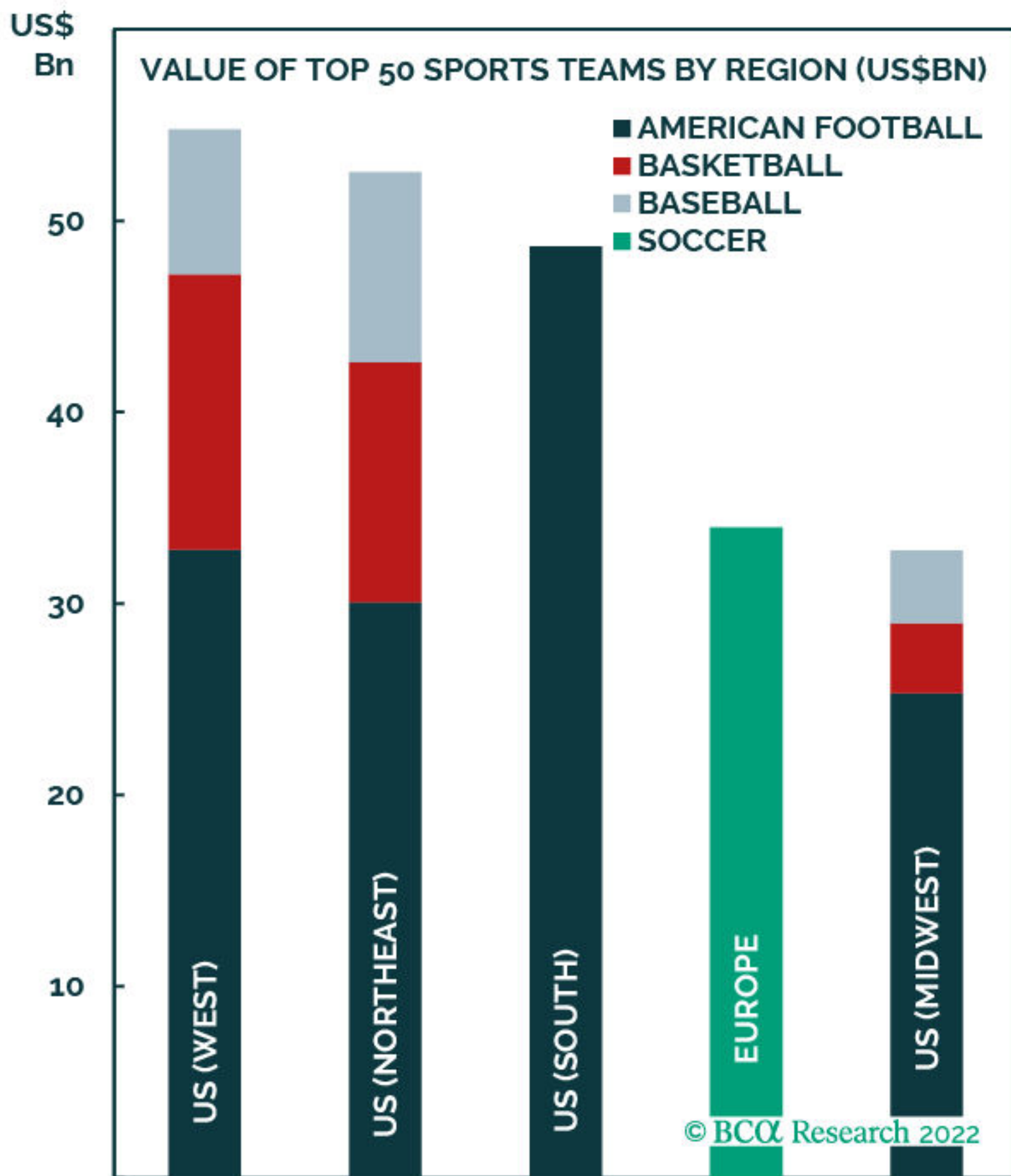
LEAGUE	CLUB	AMERICAN OWNER
ENGLISH PREMIER LEAGUE	Arsenal	Stan Kroenke (also the owner of Los Angeles Rams, Colorado Rapids)
	Aston Villa	Wesley Edens
	Fulham	Shahid Jhan (also the owner of Jacksonville Jaguars)
	Crystal Palace	Josh Harris, David Blitzner and John Textor (also the owner of New Jersey Devils (NHL), Philadelphia 76ers)
	Leeds United	49ers Enterprises (York family) - (also the owner of San Francisco 49ers)
	Liverpool	John Henry &Tom Werner (Fenway Sports Group owns Boston Red Sox, Pittsburgh Penguins), Lebron James
	Manchester United	Glazer family (also the owner of Tampa Bay Buccaneers)
ITALIAN SERIE A	Fiorentina	Rocco Commisso (also the owner of New York Cosmos)
	AC Milan	RedBird Capital Partners (investor in Fenway Sports Group)
	AS Roma	Dan Friedkin
	Spezia	Robert Platek
	Inter	Oaktree fund (minority stake)
SPANISH LALIGA	Mallorca	Robert Sarver, Steve Nash, Stu Holden, Kyle Martino (Sarver is also the owner of Phoenix Suns)
FRENCH LIGUE 1	Lyon (OL)	John Textor
	Marseille (OM)	Frank McCourt (former owner of LA Dodgers)
	Toulouse	RedBird Capital Partners (investor in Fenway Sports Group)
ENGLISH CHAMPIONSHIP	Barnsley	Chien Lee, Paul Conway, Billy Beane
	Coventry City	Joy Seppala
	Burnley	Alan Pace/ALK Capital
	Millwall	John Berylson, Richard Smith
	Swansea City	Stephen Kaplan, Jason Levien
ITALIAN SERIE B	Genoa	777 Partners
	Venezia	Duncan Niederauer
	Parma	Kyle Krause
	Ascoli	Matt Rizzetta, North Six Group
FRENCH LIGUE 2	Caen	Oaktree fund
	Le Havre	Vincent Volpe

AVERAGE
VALUE-TO-REVENUE MULTIPLE

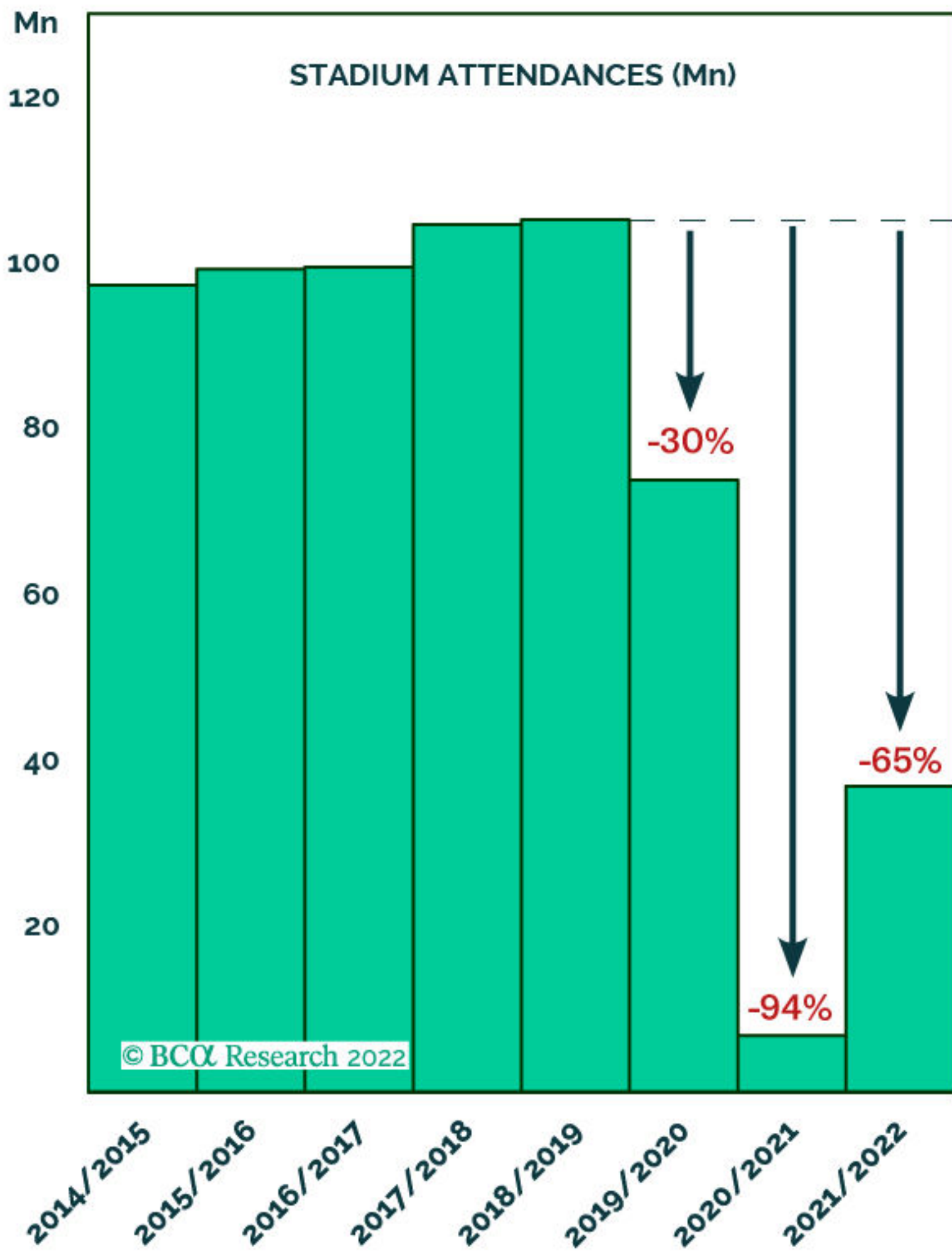


SOURCE: SPORTICO.

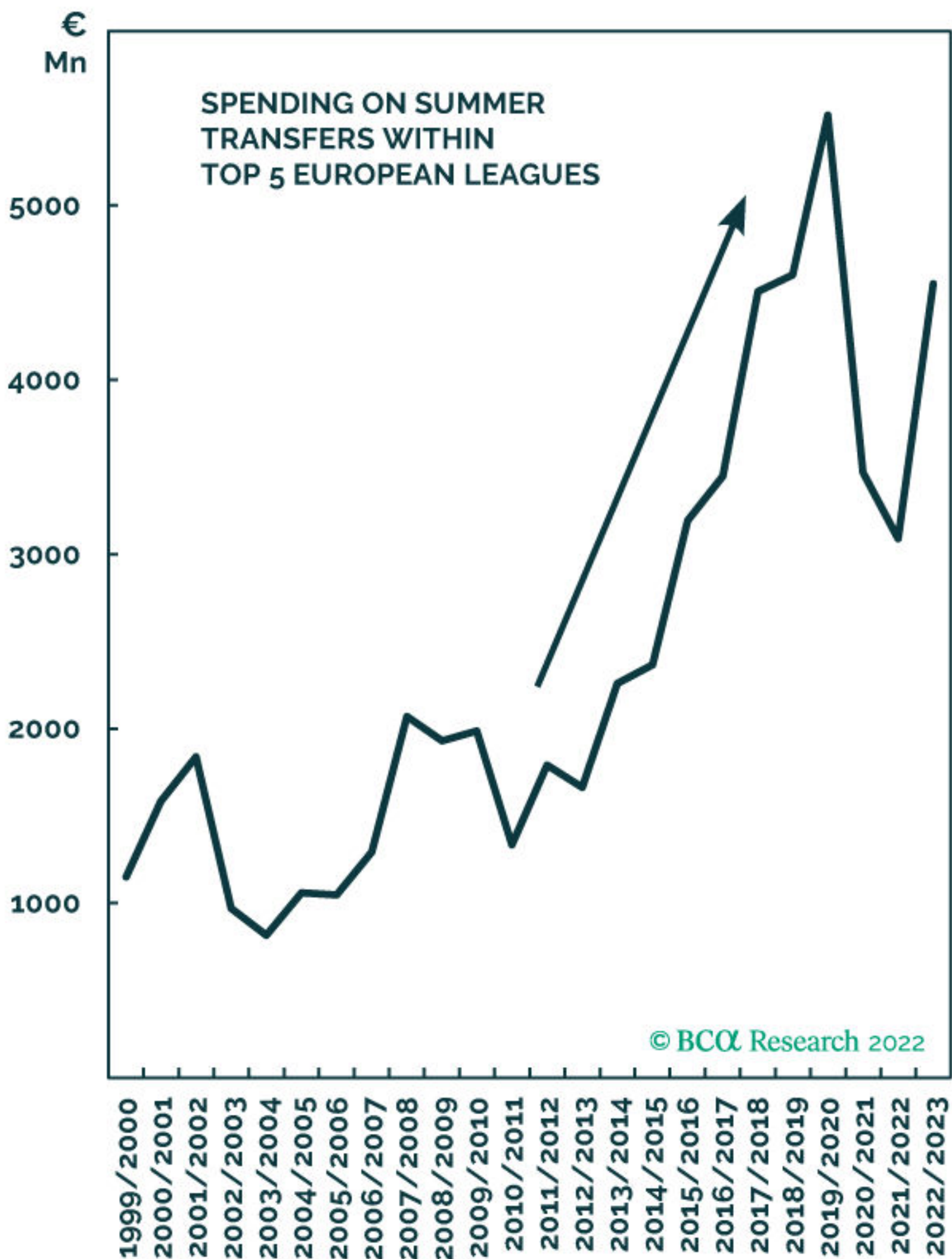
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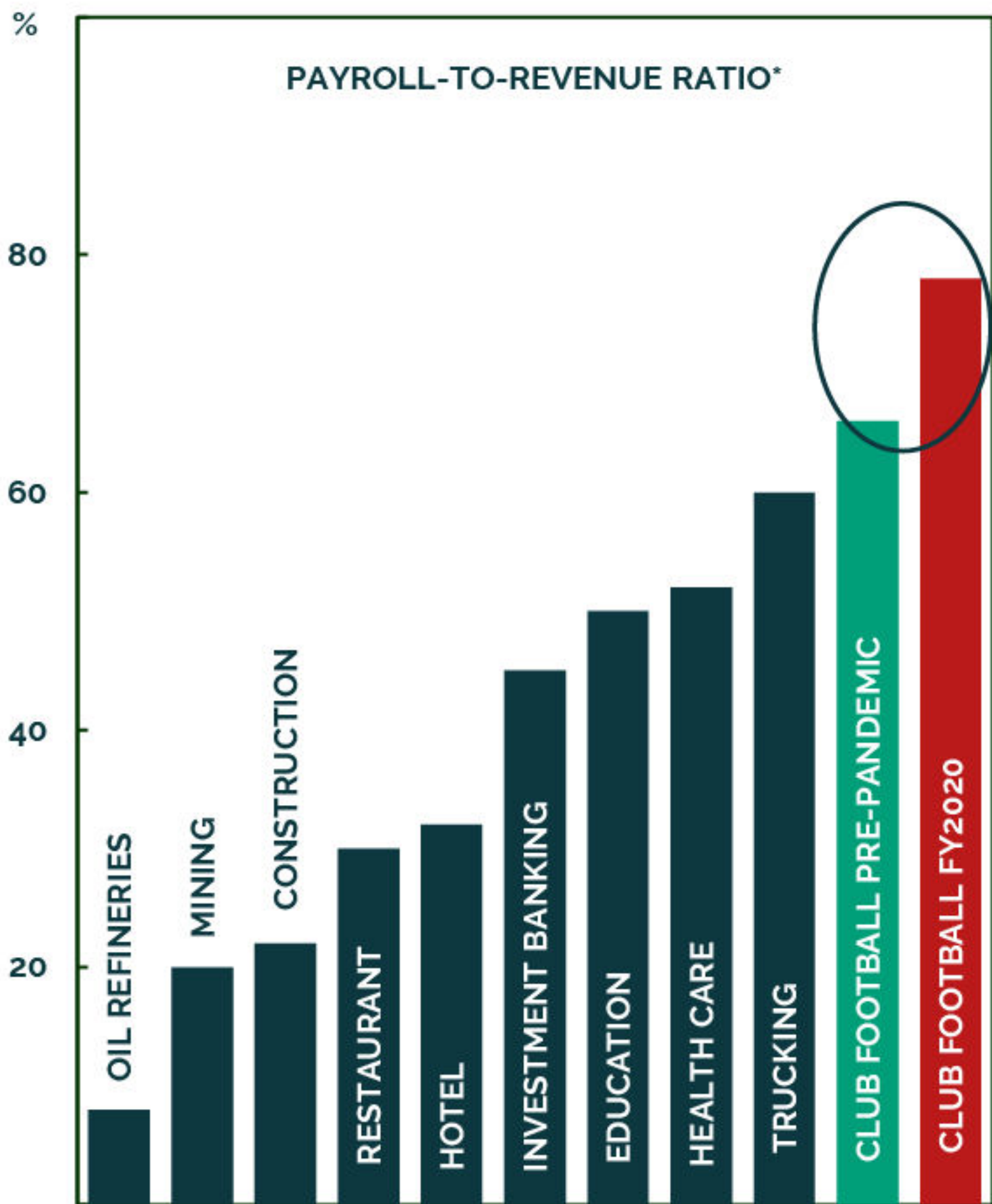
SOURCE: FORBES.



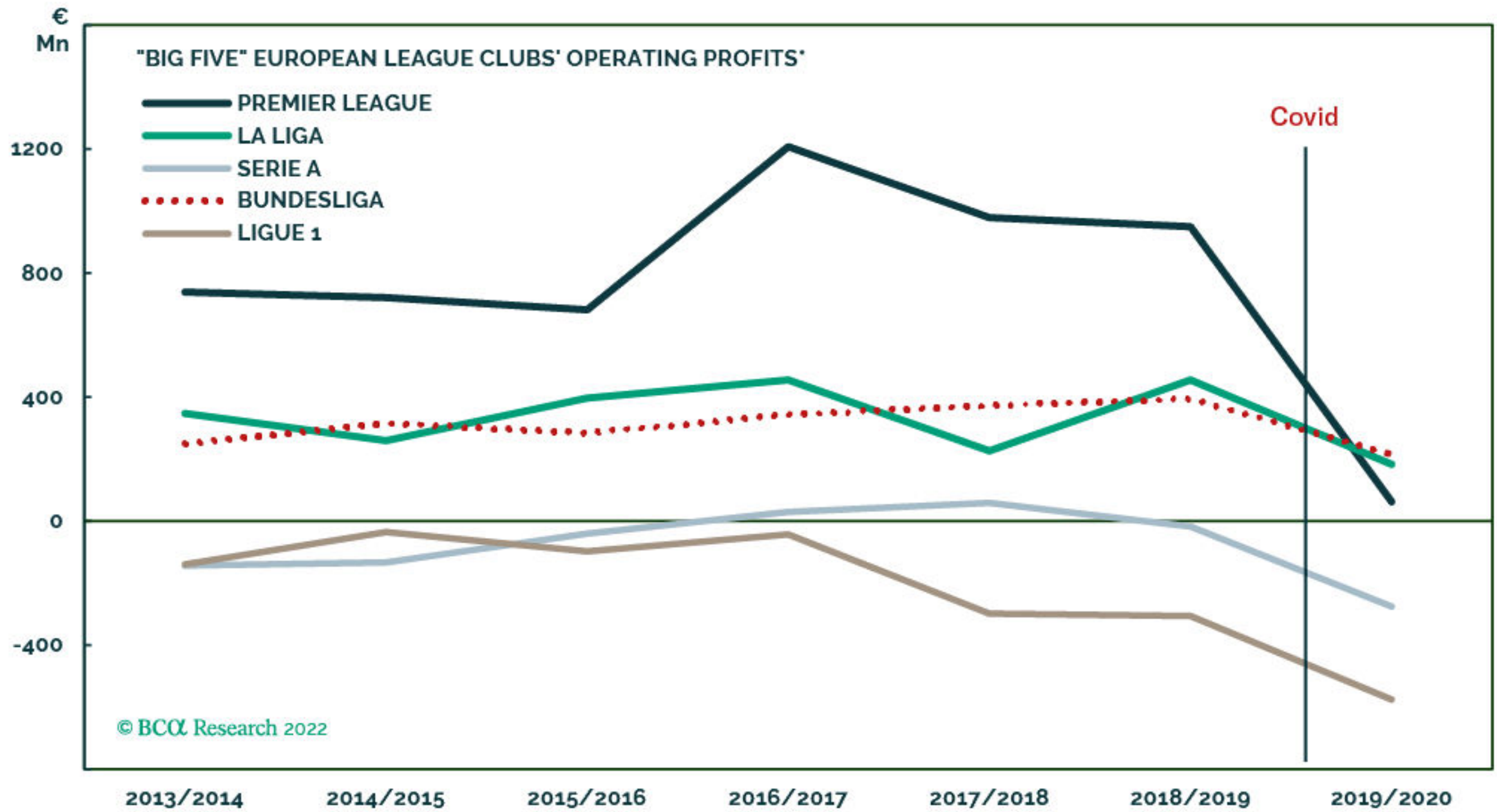
SOURCE: UEFA CLUB LICENSING BENCHMARKING REPORT (2022).



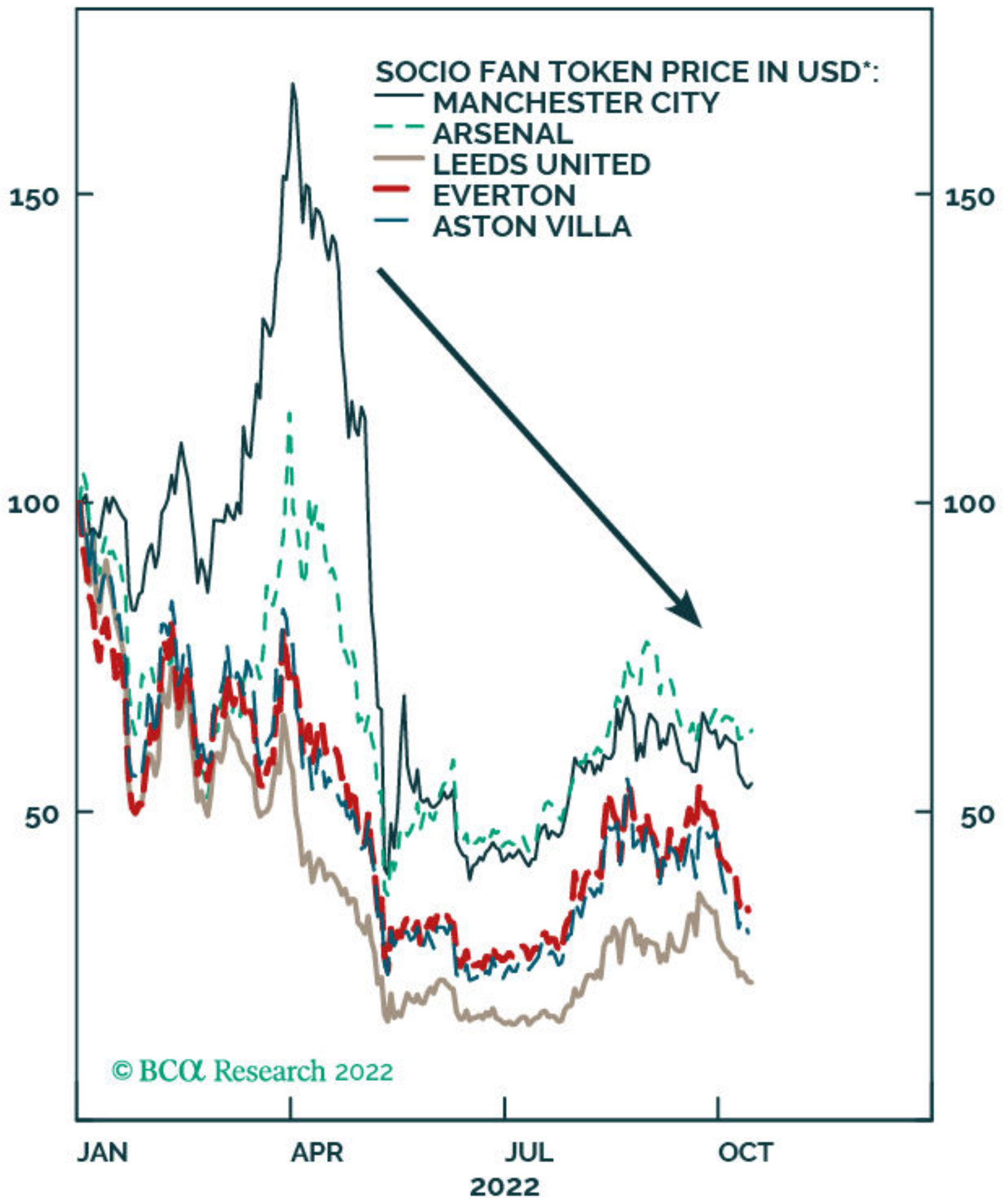
NOTE: SUMMER TRANSFERS ONLY.
SOURCE: TRANSFERMARKT.COM.



* SOURCE: UEFA CLUB LICENSING BENCHMARKING REPORT (2022).



* SOURCE: ANNUAL REVIEW OF FOOTBALL FINANCE 2021, DELOITTE.



*ALL SERIES REBASED TO 100 AT JANUARY 2022. SOURCE: COINGECKO



This report was brought to you by F.C. BCA Research. Any errors and omissions are the fault of our own slow-footed defense and poor goalkeeping. The authors of the report do not encourage sports gambling and advise readers that quantitative models, like football strikers, occasionally misfire in front of an open net. We greatly thank the patience of our Layout & Design Team, which made time in its busy schedule publishing actual investment-relevant research to produce this report. Team management also wishes to apologize, in advance, to the company IT department for the network bandwidth that the authors will invariably and wantonly waste on streaming World Cup matches during working hours. Finally, we wish to thank our clients for engaging us in discussions about macroeconomics, geopolitics, the markets, life, and sports. It is from you that we draw the inspiration for our research and to whom we dedicate all of our efforts.

Coach

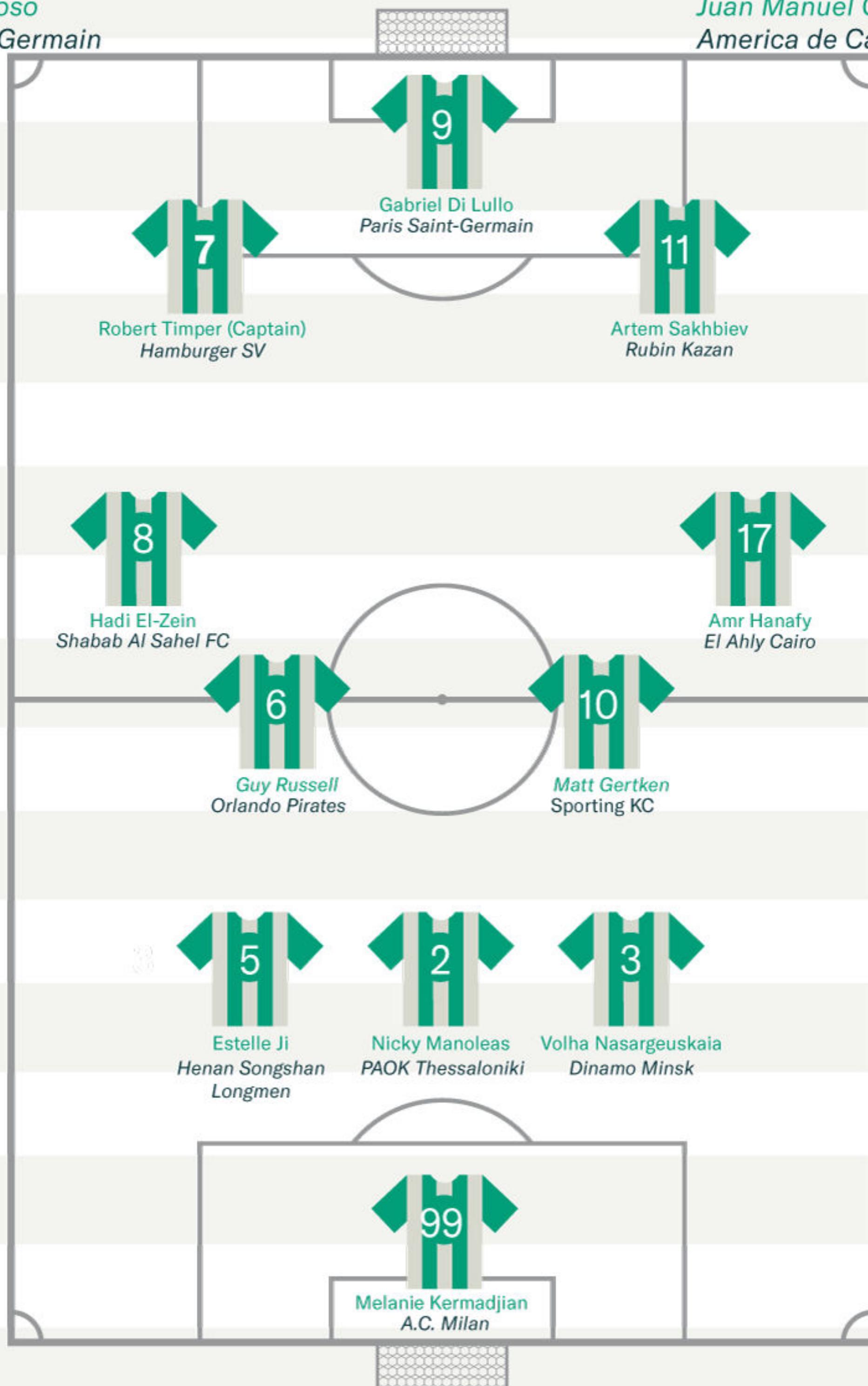
Jeremie Peloso

Paris Saint-Germain

Assistant Coach

Juan Manuel Correa Ossa

America de Cali



Marko Papić
Stadium