

LPL RESEARCH PRESENTS

WORLD CUP-ONOMICS

2022



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Contents

Introduction	4
The Hosts: Qatar	5
Is the World Cup Really The Biggest Sporting Event?	6
World Cup Stats: The Fast and the spurious	7
World Cup Groups – Countries /Economies / Teams	10
Group A – Preview, Qatar & Ecuador	10
Group A – Senegal, Netherlands & Fixtures	11
Group B – Preview, England & Iran	12
Group B – United States, Wales & Fixtures	13
Group C – Preview, Argentina & Saudi Arabia.....	14
Group C – Mexico, Poland & Fixtures	15
Group D – Preview, France & Australia	16
Group D – Denmark, Tunisia & Fixtures	17
Group E – Preview, Spain & Costa Rica	18
Group E – Germany, Japan & Fixtures	19
Group F – Preview, Belgium & Canada	20
Group F – Morocco, Croatia & Fixtures.....	21
Group G – Preview, Brazil & Serbia	22
Group G – Switzerland, Cameroon & Fixtures	23
Group H – Preview, Portugal & Ghana	24
Group H – Uruguay, South Korea & Fixtures	25
Knockout Round Fixtures	26
Model based World Cup Predictions	27
Disclosures	30

INTRODUCTION

GEORGE SMITH CFA, CAIA, CIPM, PORTFOLIO STRATEGIST, ASSISTANT VICE PRESIDENT, RESEARCH

Welcome to the first quadrennial World Cup-onomics report by LPL Research. We look, through an economic lens, at the biggest sports event on the planet that kicks off on Sunday November 20 in Doha, Qatar – the soccer* World Cup. We hope that this report can provide some light-hearted entertainment as well as a touch of economic insight but most importantly can act, along with the World Cup itself, as an opportunity to take a different kind of global perspective through the lens of event that, while just a game**, brings the world together around a common interest.

Firstly we take a closer look at the hosts, Qatar, and some of the records that this World Cup will set. As well as looking at the many controversies, including human rights issues, that have dogged preparations so far, so much so that there have been warranted claims to boycott the cup.

We tackle the question, is the World Cup really the biggest sporting event? by taking a look at television viewing figures and tournament revenues, and see how this stacks up to the biggest event in U.S. sports, the Super Bowl.

We look at some correlations, some non-spurious, some fun, relating to World Cup data. Does the World Cup being outside of Europe favor the South American teams? Do global markets perform better if a team from South America or Europe wins the cup? Are warmer global temperatures leading to more penalty shootouts?

We review each of the 8 World Cup groups, looking at the economies and teams of all 32 participating nations in more detail. Who knew that Qatar actually had the best performing stock market over the past 5 years? That Ecuador has the youngest squad? Or that Serbia is one of the world's largest producers of raspberries?

Lastly we apply our investment based analysis (fundamentals, technicals and valuations) to the team stats to try to predict a winner (running 64,000 simulated matches in the process). No surprises as our model splits out Brazil as a winner, but it does throw up a finalist that would be one of the biggest shocks in World Cup history if it were to occur.

Good luck to all of our advisors and their clients whichever team you will be cheering for.

Regards,

George

*We have used the word soccer throughout this report but understand that much of the world calls it football/fútbol/futebol. Note that without this disclaimer your English author may have had his passport confiscated upon his next trip back across the pond.

**Legendary Liverpool FC Manager Bill Shankly once said *"Some people believe football is a matter of life and death, I am very disappointed with that attitude. I can assure you it is much, much more important than that."*

THE HOSTS: QATAR

A World Cup of many records and firsts but also many controversies

Before the World Cup hosting rights were awarded back in 2010 not many soccer fans would have been able to pick out Qatar on the map, and probably many still can't. This is not surprising as Qatar is the smallest ever country to host the World Cup. The natural gas and oil rich country is actually slightly smaller than the U.S. state of Connecticut, or the English county of Yorkshire, with a population similar to the U.S. state of Kansas. It's the first time that the World Cup has ever been hosted in the Middle East (an area not known for its soccer pedigree with no Middle Eastern team ever getting past the second round). It's also the first time that the World Cup has been played outside of the Northern Hemisphere's summer months after it was moved to November and December in an effort to avoid Qatar's sweltering summer heat, averaging 106 Fahrenheit in July. It will be the first men's World Cup to feature female referees. As shown in the below chart it is also the most expensive World Cup ever by a huge margin. In fact, it's costing Qatar over four and a half times the total cost of the prior 8 World Cups combined, as they have built 7 new stadiums, a new airport, a new metro system, 100 hotels, multiple new highways, and even a whole new city to host the final match:

World Cup Host	General cost (U.S. \$ Billions)
 Qatar (2022)	220
 Russia (2018)	11.6
 Brazil (2014)	15
 South Africa (2010)	3.6
 Germany (2006)	4.3
 South Korea/ Japan (2002)	7
 France (1998)	2.3
 USA (1994)	0.5
 Italy (1990)	4

Source: LPL Research, FrontofficeSports 11/16/2022

The decision to hold the World Cup in Qatar has been beset by controversy from even before it was selected as host. There have been various allegations of bribery and corruption in the World Cup selection process when Qatar was awarded the Cup. Moving the World Cup to the winter placed it right in the middle of the season for the major European soccer leagues, requiring them to reshuffle schedules over multiple seasons and increasing concerns over player burnout. It also put the World Cup in a direct clash with the National Football League (NFL) season in the U.S. something that Fox Sports, which had paid \$425 million to broadcast the 2018 and 2020 World Cups was not happy about. There have been concerns over infrastructure for fans, including access to alcohol in a country that is normally largely dry. The main controversy has been over human rights in Qatar, both for LGBTQ soccer fans, in a country where homosexuality is illegal, and the treatment of migrant construction workers who were hired to build the World Cup infrastructure. In a shocking report by British newspaper *The Guardian* it suggested that upwards of 6,500 migrant workers, mostly from the Indian sub-continent, may have died since Qatar won its World Cup bid. As a result there have been many calls for boycotts, such as in the French capital, Paris, where local authorities announced that they will not broadcast any matches in public places this tournament.

IS THE WORLD CUP REALLY THE BIGGEST SPORTING EVENT?

Based on both viewership and revenue per game it is

Looking at total audience reach (the number of people who watched at least 1 minute of the event) for sporting events, the World Cup dwarfs all other events, with almost half of the global population watching at least some of the 2018 World Cup. The average viewership for each game at the last World Cup was 191 million, showing each match is a truly global viewing event. This compares to the Super Bowl, which during the most watched edition in 2015 attracted 115 million domestic viewers plus an estimated 30 to 50 million internationally.

Event	Sport	Frequency	Total Audience Reach (Billions)
World Cup	Soccer	Every Four Years	3.5
Tour de France	Cycling	Annual	2.6
Olympic Games	Various	Every Four Years	2
Champions League	Soccer	Annual	1.7
Confederations Cup	Soccer	Every Four Years (now discontinued)	1
Asian Games	Various	Every Four Years	0.99
World Cup	Rugby	Every Four Years	0.79
Giro d'Italia	Cycling	Annual	0.78
Winter Olympics	Various	Every Four Years	0.48

Total audience reach defined as people who watched at least 1 minute of event.

Source: LPL Research, Whatculture.com 11/16/2022

When looking at just the World Cup Final this attracted a peak audience for the 2014 final (between Germany and Argentina in Brazil) of almost 700 million compared to the same year's Super Bowl at around 150 million. The whole NFL season does generate more revenue than the World Cup (a very impressive, \$14 billion versus \$5.4 billion) but that's over 272 games compared to a World Cup which has only 64 matches. Each World Cup game generates \$84 million, \$32 million more than each NFL game.

Year	Soccer World Cup Final (Global Viewership Millions)	Super Bowl (Global Viewership Millions)	Soccer World Cup Total Revenue (U.S. \$ Billions)	NFL Season Total Revenue (U.S. \$ Billions)
2010	619.7	146.5	3.64 \$56.9M Per Game	8.35 \$31.3M Per Game
2014	695	152.3	4.83 \$75.5M Per Game	11.09 \$41.5M Per Game
2018	516.6	143.4	5.4 \$84.4M Per Game	14 \$52.4M Per Game

Soccer World Cup Viewership includes includes all viewers who watched at least 20 minutes

Superbowl viewership is average viewers and includes estimated 40M overseas viewers

Source: LPL Research, FIFA.com, Nielsen, Statista.com 11/16/2022

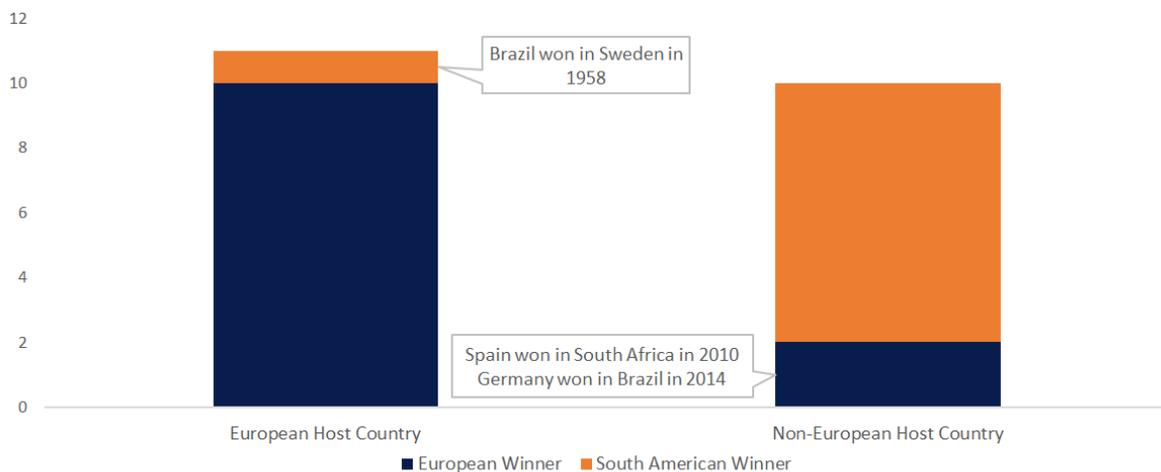
WORLD CUP STATS: THE FAST AND THE SPURIOUS

Location, Location, Location

The geographic location of the World Cup has historically had a huge correlation with the geographic location of the winning team. In the 19 World Cups from 1930 to 2006 when the cup was played outside of Europe one of the South American teams (Uruguay, Brazil, Argentina) always won and when it was hosted in Europe one of the European teams (Italy, Germany, England, France, Spain) almost always won. The only exception to this was when a Pele-inspired Brazil managed to win in Sweden in 1958. This ensured a regular rotation of winners as the host nation shuffled back and forth across continents. However as financial disclaimer always say “past performance is not indicative of future results” and that seems to be the case here as European teams look to have cracked the code to winning away.

Have European Teams Cracked the Code to Win Away?

Number of World Cup Wins by Winner and Host Continent (1930 to 2018)



Source: LPL Research, FIFA.com 11/12/2022

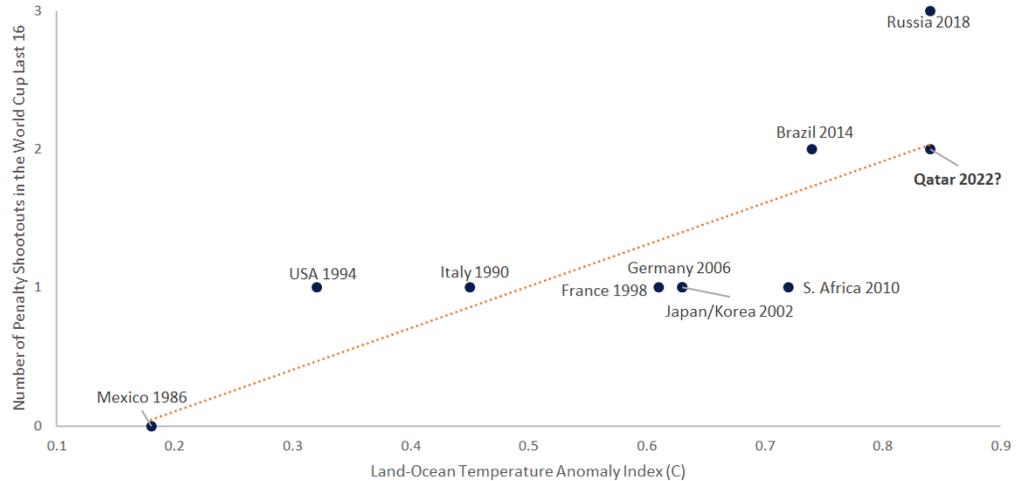
Defying the prior trend the last two cups hosted outside of Europe have been won by European teams (Spain in South Africa in 2010 and Germany in Brazil in 2014). Tacking onto European wins in 2006 (Italy won in Germany) and 2018 (France won in Russia) Europe now has four in a row, the longest ever streak for one continent so the South Americans (and the rest of the world) will be desperate for a return to form on this metric. The last, and only, World Cup previously hosted in Asia, in Japan and South Korea in 2002, was won by Brazil.

Paying the Penalty?

There is a fairly strong (spurious) correlation (0.77) between estimated global temperature anomaly data, collected by NASA to monitor global climate change and the number of penalty shootouts that occur in the last 16 of the World Cup. Perhaps the extra heat is making it harder for players to find a winner in extra-time before penalties. This data looks to be pointing towards two or three penalty shootouts this time around!

Hotter Temperatures Equals More Penalty Shootouts?

Penalty Shootouts in World Cup Last 16 vs Temperature Anomaly Index (1986 to 2018)

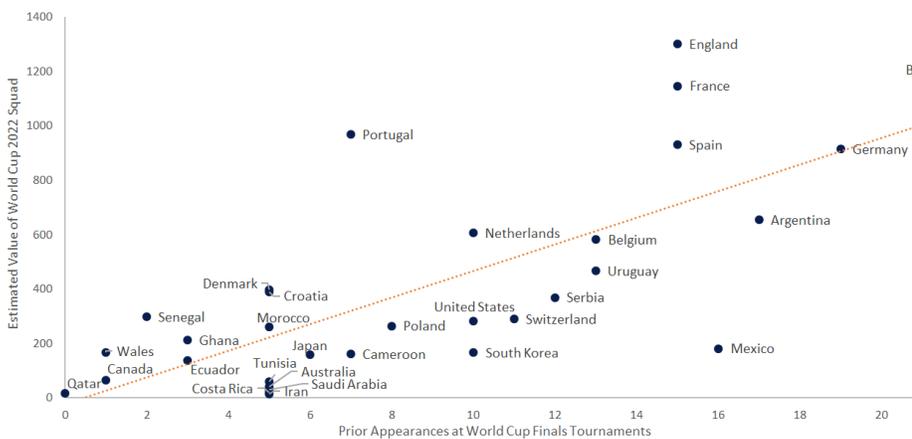


Source: LPL Research, FIFA.com, Nasa.gov, Revista Internacional de Ciencias del Deporte 11/12/2022
 Past performance is no guarantee of future results. Forecasts may not develop as predicted

Mo History, Mo Money?

More World Cup History Equals More Valuable Current Players

Value of World Cup 2022 Squads (U.S. \$) vs Prior Appearances at the World Cup (1930 to 2018)



Source: LPL Research, FIFA.com, TransferMKT.com 11/12/2022

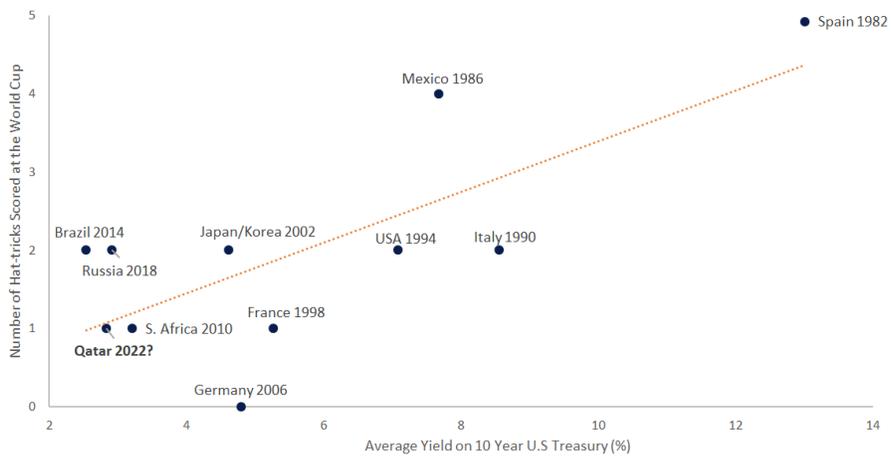
The estimated current value of the World Cup squads appears to have a fairly strong positive correlation to the prior number of appearances that teams have made at the World Cup. Logically this makes sense as teams with more World Cup history have had more time to develop the sport, leading to development of better, and hence more valuable players. A few anomalies in the data appear to be the elevated values of the England and Portugal squads, perhaps influenced by outsized global popularity of the English Premier League inflating player values (25 of England's 26 man squad play in the English Premier League as do 10 of Portugal's squad). The Mexico squad shows a relative lack of value compared to the team's 16 prior World Cup appearances, probably a consequence of only 4 of their players plying their trade in one of Europe's top domestic leagues (England, Germany, Spain, Italy, Portugal).

Will 2022's Rates-Trick Lead to More Hat-tricks?

There is a spurious correlation between the average 10 year U.S. treasury yield and the number of hat-tricks (three goals in a game by one player) scored at the World Cup finals. Yields had been falling since the early 1980s, as had the number of World Cup hat-tricks (there were actually none in 2006). Through trending upwards, the average 10-year yield for 2022 so far is actually pretty similar to 2018, when we saw a slightly above trend two hat tricks, so one or possibly two looks to be the expected hat-trick yield for the 2022 edition.

Higher Rates Equals More World Cup Hat-Tricks?

Hat-tricks Scored at the World Cup vs Average 10 Year Treasury Yield (1982 to 2018)

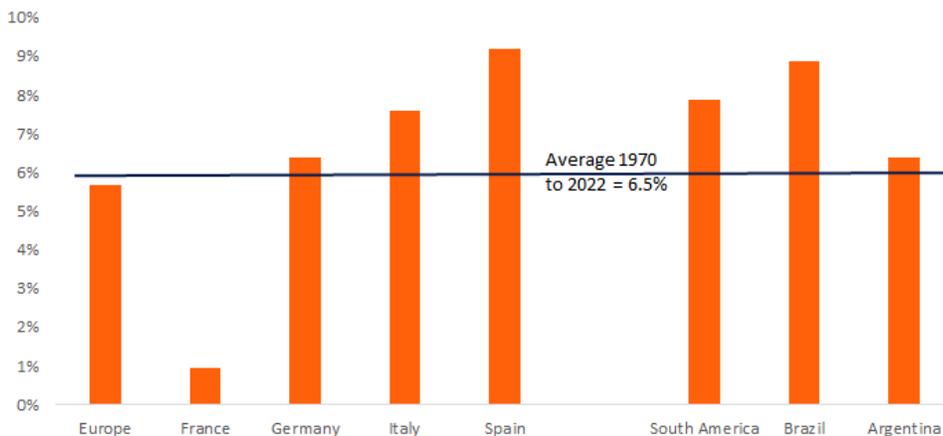


Source: LPL Research, FIFA.com, FRED, 11/12/22
 Spain 1982 only had 24 teams, compared to 32 at each subsequent World Cup so the number of Hat-tricks scored (4) is factored up
 Past performance is no guarantee of future results. Forecasts may not develop as predicted

Do Global Stocks Cheer For Any Team? Or Region?

Anyone But France For Global Markets?

MSCI World Index Average Annual Returns, 4 Years After World Cup Win (1970 to 2022)



Source: LPL Research, FIFA.com, Factset, 11/12/2022
 Past performance is no guarantee of future results. Forecasts may not develop as predicted
 Do not invest based on the winner of the World Cup. Indices are unmanaged and cannot be invested into

Looking back at global stock market returns and how they do in the four calendar years after a team's World Cup win there is a clear loser. The average post world cup annual return when France are champions has been under 1%, compared to an average for all teams of 6.5%. France managed to catch the Dotcom Bust, Covid-19, and 2022 equity bear markets during their time as defending champions.

Overall the best market performance followed Spain's win in 2010, at just over 9% annual returns. Brazil is not far behind, with annual returns just under 9% following their wins in 1970, 1994 and 2002, and a South American win on average is followed by better returns than one from a European team.

WORLD CUP GROUPS - COUNTRIES /ECONOMIES / TEAMS

GROUP A - PREVIEW, QATAR & ECUADOR

This group kicks off the World Cup with the host's first match versus Ecuador on Sunday November 20. With Qatar the number 1 seed in this group by virtue of being hosts, there is a traditional powerhouse team, the Netherlands, at the number 2 seed to contend with, and the Dutch will be heavy favorites to qualify in first place. This leaves a dogfight for the second qualifying place between fairly evenly matched Qatar, Senegal, and Ecuador in a group that has the lowest average world ranking (30). It's also the group with the second youngest average player age, which may contribute to the squads being worth the least on average. Economically speaking this is a group of the haves and have-nots. Qatar is the richest nation, as measured by gross domestic product (GDP) per capita, and Senegal is the poorest at this World Cup, with the average Qatari earning in two weeks what the average Senegalese earns in a year. This group of countries has the smallest combined size and population but the lowest combined unemployment rate and the best stock market performance over the past 5 years.

Qatar

The hosts face an uphill battle to get out of the group at their first appearance in a World Cup finals tournament. They are the third lowest ranked team and have the lowest valued squad in the tournament at just \$16 million (less than an average player on many teams). They will be hoping that they do not become only the second ever host nation, after South Africa in 2010, to fail to advance past the group stage. In terms of area and population they are the smallest team in the competition. Economically though Qatar are top of the league with the highest GDP per capita, lowest unemployment rate, and best 5-year stock market returns out of any participating team.

The Country		The Economy		The Team		2022 WC Rank
Region:	Middle East	GDP Per Capita:	\$85,300	World Ranking:	50	30/32
Area (Sq KM):	11,586	Unemployment rate:	0.3%	Prior WC Appearances:	0	32/32
Population:	2,500,000	Natural Resources:	Petroleum, fish, natural gas	Prior Best WC Performance: First Appearance		
Language:	Arabic	Main Industries:	Liquefied natural gas, crude oil	All-time WC Ranking:	80	32/32
Capital City:	Doha	MSCI Classification:	Emerging Market	Average Player Age:	27.5	14/32
Currency:	Qatari riyal	Stock Market Tot. Return:	12.9%	Total Squad Value:	\$15,389,634	31/32
Life Expectancy (Yrs):	80.2	(5yr annualized, ETF proxy)		Player to Watch: Akram Afif		

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Ecuador

Ecuador will see this as a great opportunity to make it past the group phase for the first time, having fallen at this hurdle in 2002, 2006 and 2014. Ecuador has the youngest squad at the World Cup with an average age of just over 25 years. Ecuador has one of the lowest GDP per capita of countries in the competition.

The Country		The Economy		The Team		2022 WC Rank
Region:	South America	GDP Per Capita:	\$10,300	World Ranking:	44	29/32
Area (Sq KM):	283,561	Unemployment rate:	6.4%	Prior WC Appearances:	3	27/32
Population:	17,300,000	Natural Resources:	Petroleum, fish, timber	Prior Best WC Performance: Group Stage (2002, 2006, 2014)		
Language:	Spanish, Quechua	Main Industries:	Petroleum, food processing, textiles	All-time WC Ranking:	40	23/32
Capital City:	Quito	MSCI Classification:	Not Classified by MSCI	Average Player Age:	25.3	32/32
Currency:	United States dollar	Stock Market Tot. Return:	No ETF Proxy Available	Total Squad Value:	\$136,975,800	25/32
Life Expectancy (Yrs):	77.0	(5yr annualized, ETF proxy)		Player to Watch: Moisés Caicedo		

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

GROUP A - SENEGAL, NETHERLANDS & FIXTURES

Senegal

Senegal will be sweating on the fitness of their captain and talisman, Saido Mane, after he picked up an injury while playing for Bayern Munich in Germany. They have one of the younger squads in the tournament, so without the experience of the former Liverpool man they may struggle to beat their prior World Cup best showing of the quarterfinals in 2022. Senegal is the poorest country at the World Cup as ranked by GDP per capita with its economy relying main industries of agriculture and fishing.

The Country		The Economy		The Team		2022 WC Rank
Region:	Africa	GDP Per Capita:	\$3,300	World Ranking:	18	16/32
Area (Sq KM):	196,722	Unemployment rate:	3.7%	Prior WC Appearances:	2	29/32
Population:	16,500,000	Natural Resources:	Fish, phosphates, iron ore	Prior Best WC Performance: QuarterFinals (2002)		
Language:	French	Main Industries:	Agricultural and fish processing	All-time WC Ranking:	41	24/32
Capital City:	Dakar	MSCI Classification:	Frontier Market	Average Player Age:	26.9	23/32
Currency:	West African CFA franc	Stock Market Tot. Return:	No ETF Proxy Available	Total Squad Value:	\$297,586,640	14/32
Life Expectancy (Yrs):	67.9	(5yr annualized, ETF proxy)		Player to Watch: Sadio Mané		

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Netherlands

The Netherlands finished top of their group in the qualification tournament for Qatar 2022 so they will come into the Cup full of confidence. They have fitness worries over Barcelona man, Memphis Depay, but will see this group as the perfect springboard to make up for lost time after not qualifying for the World Cup in 2018. The Dutch have a high GDP per capita and the stock market managed an impressive 5% annual return over the last 5 years.

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$54,200	World Ranking:	8	7/32
Area (Sq KM):	41,543	Unemployment rate:	4.0%	Prior WC Appearances:	10	12/32
Population:	17,400,000	Natural Resources:	Natural gas, petroleum, peat	Prior Best WC Performance: Runners-up (1974, 1978, 2010)		
Language:	Dutch (de facto)	Main Industries:	Agro-industries, metals, engineering	All-time WC Ranking:	8	7/32
Capital City:	Amsterdam	MSCI Classification:	Developed Market	Average Player Age:	27.2	20/32
Currency:	Euro	Stock Market Tot. Return:	5.0%	Total Squad Value:	\$606,722,220	8/32
Life Expectancy (Yrs):	82.3	(5yr annualized, ETF proxy)		Player to Watch: Memphis Depay		

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Fixtures

Group A Fixtures									
Game #	Day	Date	Time	Team 1	Score	Team 2			
1	Sun	Nov 20, 2022	11:00 E.T	Qatar 		Ecuador 			
2	Mon	Nov 21, 2022	11:00 E.T	Senegal 		Netherlands 			
18	Fri	Nov 25, 2022	8:00 E.T	Qatar 		Senegal 			
19	Fri	Nov 25, 2022	11:00 E.T	Netherlands 		Ecuador 			
33	Tue	Nov 29, 2022	10:00 E.T	Ecuador 		Senegal 			
34	Tue	Nov 29, 2022	10:00 E.T	Netherlands 		Qatar 			

GROUP B - PREVIEW, ENGLAND & IRAN

This group throws up some interesting matchups with a battle of Britain between England and Wales, as well as the United States vs Iran. On paper group B is the hardest in the tournament with an average world ranking of just 15. However, this belies the fact that teams have been struggling with form, injuries or both. England are the clear favorites to progress but come into the tournament with no wins in their last 6 games and injuries to some key players, particularly in defensive positions. Likewise Wales have fitness doubts over their star man, Gareth Bale, and the U.S have concerns over Weston McKennie, injured in October while playing for Juventus in Italy. The U.S has the third youngest squad at the World Cup. This group has the combined largest land mass and population of all groups at the World Cup, mostly thanks to the contributions of the U.S. It's also the second richest group as measured by GDP per capita.

England +

The "Three Lions" come into the tournament with low expectations following a run of 3 defeats in their last 6 games, including their worst home defeat since 1928, coming in a 4-0 loss to Hungary in the summer. England has perennially underachieved when great things have been expected so dampened enthusiasm could work in their favor as it seemed to in 2018 when they reached the semifinals. England has the most valuable squad in the tournament, and has World Cup pedigree, lifting the cup in 1966, so a quarterfinal berth at least will probably be required in order to keep manager Gareth Southgate in a job. Muted stock market returns of just under 1% annualized over the past 5 years shine some light into a tough economic environment in the United Kingdom.

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$41,600	World Ranking:	5	5/32
Area (Sq KM):	130,279	Unemployment rate:	4.5%	Prior WC Appearances:	15	5/32
Population:	56,000,000	Natural Resources:	Coal, petroleum, natural gas	Prior Best WC Performance:	Champions (1966*) *Hosts	
Language:	English (de facto)	Main Industries:	Retail, hospitality, professional services	All-time WC Ranking:	6	5/32
Capital City:	London	MSCI Classification:	Developed Market	Average Player Age:	27	22/32
Currency:	British pound	Stock Market Tot. Return:	0.8%	Total Squad Value:	\$1,301,538,680	1/32
Life Expectancy (Yrs):	81.3	(5yr annualized, ETF proxy)		Player to Watch:	Phil Foden	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Iran

Coming into the tournament Iran faced multiple calls for the team to be kicked out for political reasons. Political divides even permeate the squad, meaning that Portuguese coach, Carlos Queiroz, taking charge of his third World Cup with Iran, likely has his toughest job yet to get the best out the least valuable, squad at the World Cup.

The Country		The Economy		The Team		2022 WC Rank
Region:	Middle East	GDP Per Capita:	\$12,400	World Ranking:	20	18/32
Area (Sq KM):	1,648,195	Unemployment rate:	11.5%	Prior WC Appearances:	5	19/32
Population:	86,700,000	Natural Resources:	Petroleum, natural gas, coal	Prior Best WC Performance:	Group Stage (1978, 1998, 2006, 2014, 2018)	
Language:	Persian	Main Industries:	Petroleum, petrochemicals, gas, fertilizer	All-time WC Ranking:	48	28/32
Capital City:	Tehran	MSCI Classification:	Not Classified by MSCI	Average Player Age:	26.4	27/32
Currency:	Iranian rial	Stock Market Tot. Return:	No ETF Proxy Available	Total Squad Value:	\$13,993,018	32/32
Life Expectancy (Yrs):	76.7	(5yr annualized, ETF proxy)		Player to Watch:	Alireza Jahanbakhsh	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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GROUP B - UNITED STATES, WALES & FIXTURES

United States

The U.S men’s national team (USMNT) are happy to be back on the world stage having missed out on qualification for Russia 2018. They name a youthful squad which is the second youngest in the history of the USMNT (with only the 1990 squad being younger). Lack of World Cup experience could be an issue with only DeAndre Yedlin, a survivor from the 2014 World Cup squad. This is a group that the USMNT should be expecting to qualify for with the opener against Wales the key matchup. The U.S is an economic powerhouse that is gearing up to host its own World Cup (jointly with Mexico and Canada) in 2026.

The Country		The Economy		The Team		2022 WC Rank
Region:	North America	GDP Per Capita:	\$60,200	World Ranking:	16	15/32
Area (Sq KM):	9,833,517	Unemployment rate:	5.5%	Prior WC Appearances:	10	12/32
Population:	332,900,000	Natural Resources:	Coal, copper, lead, molybdenum	Prior Best WC Performance:	Third place (1930)	
Language:	English (de facto)	Main Industries:	Technology, Petroleum, steel, motor vehicles	All-time WC Ranking:	26	17/32
Capital City:	Washington, D.C.	MSCI Classification:	Developed Market	Average Player Age:	25.6	31/32
Currency:	United States dollar	Stock Market Tot. Return:	10.2%	Total Squad Value:	\$282,009,000	16/32
Life Expectancy (Yrs):	78.9	(5yr annualized, ETF proxy)		Player to Watch:	Weston McKennie	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Wales

Wales qualified for the tournament after beating Ukraine in a playoff earlier in 2022. It’s their first time at the World Cup finals since 1958, when they made their only appearance, reaching the quarterfinals. For Wales there really is one player to watch, Gareth Bale. After a trophy, but also injury, laden 9 years at Real Madrid Bale moved to the U.S to play for LAFC in Major League Soccer in the U.S. He has continued to struggle for fitness, only managing 12 appearances (10 as a substitute), scoring just 2 goals. Wales is the second smallest country at the World Cup both in terms of area and population.

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$41,600	World Ranking:	19	17/32
Area (Sq KM):	20,782	Unemployment rate:	4.5%	Prior WC Appearances:	1	30/32
Population:	3,100,000	Natural Resources:	Water, Wind, Coal, Metal ores	Prior Best WC Performance:	QuarterFinals (1958)	
Language:	English (de facto)	Main Industries:	Agriculture, construction, tourism	All-time WC Ranking:	54	30/32
Capital City:	Cardiff	MSCI Classification:	Developed Market	Average Player Age:	26.9	23/32
Currency:	British pound	Stock Market Tot. Return:	0.8%	Total Squad Value:	\$165,982,440	22/32
Life Expectancy (Yrs):	81.3	(5yr annualized, ETF proxy)		Player to Watch:	Gareth Bale	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Fixtures

Group Stage									
Game #	Day	Date	Time	Team 1	Score	Team 2			
3	Mon	Nov 21, 2022	8:00 E.T	England 		Iran 			
4	Mon	Nov 21, 2022	14:00 E.T	United States 		Wales 			
17	Fri	Nov 25, 2022	5:00 E.T	Wales 		Iran 			
20	Fri	Nov 25, 2022	14:00 E.T	England 		United States 			
35	Tue	Nov 29, 2022	14:00 E.T	Wales 		England 			
36	Tue	Nov 29, 2022	14:00 E.T	Iran 		United States 			

GROUP C - PREVIEW, ARGENTINA & SAUDI ARABIA

Group C sees three teams enter the fray who will be very disappointed if they do not progress out of the group. Argentina come into the Cup as one of the favorites, in what will be Lionel Messi's last chance to emulate his hero, Diego Maradona, and lead the "Albicelestes" to World Cup glory. In what seems to be the theme for this World Cup, sandwiched into the middle of a busy domestic club season, Messi is also carrying an injury. Mexico and Poland both have the quality, to progress, had they been in any other group, and while Saudi Arabia are somewhat of an unknown quantity they are likely just there to make up the numbers. This group has the highest average age of any group; so there are likely a lot of players who know this is their final chance to leave a mark on the world stage. This group is the only one which has four countries with economies large enough (although none of them considered developed) to have Exchange Traded Funds (ETFs) that track the local stock markets.

Argentina

It's been 36 long years since Argentina last won the World Cup, as a Diego Maradona and "hand of god" inspired team won in Mexico in 1986. Argentina have been a team who has not met expectations at recent world cups, seemingly unable to find the right lineup to support their superstar, and generational talent, Lionel Messi. This changed somewhat last year as a Messi inspired Argentina won Copa America 2021 in Brazil. Argentina are ranked number 3 in the world and anything less than a semifinal berth will be a failure in Messi's signoff in an aging from the biggest stage. Argentina has the joint oldest squad age (along with the other South American giants Brazil).

The Country		The Economy		The Team		2022 WC Rank
Region:	South America	GDP Per Capita:	\$19,700	World Ranking:	3	3/32
Area (Sq KM):	2,780,400	Unemployment rate:	10.9%	Prior WC Appearances:	17	3/32
Population:	46,200,000	Natural Resources:	Arable land lead, zinc, tin, copper	Prior Best WC Performance:	Champions (1978*, 1986) *Hosts	
Language:	Spanish (de facto)	Main Industries:	Food processing, motor vehicles, durables	All-time WC Ranking:	4	3/32
Capital City:	Buenos Aires	MSCI Classification:	Emerging Market	Average Player Age:	28.4	1/32
Currency:	Argentine peso	Stock Market Tot. Return:	-0.1%	Total Squad Value:	\$653,992,300	7/32
Life Expectancy (Yrs):	76.7	(5yr annualized, ETF proxy)		Player to Watch:	Lionel Messi	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Saudi Arabia

Saudi Arabia is one of the lowest ranked teams in the tournament and will most likely be looking to avoid heavy defeats in their three group games. They could benefit from "home" support given the short drive over from Saudi Arabia to Qatar. The Saudi stock market has returned the second most from all the countries in World Cup over the past 5 years as they have benefited recently from a turnaround in oil prices.

The Country		The Economy		The Team		2022 WC Rank
Region:	Middle East	GDP Per Capita:	\$44,300	World Ranking:	51	31/32
Area (Sq KM):	2,149,690	Unemployment rate:	7.4%	Prior WC Appearances:	5	19/32
Population:	35,300,000	Natural Resources:	Petroleum, natural gas, iron ore	Prior Best WC Performance:	Last 16 (1994)	
Language:	Arabic	Main Industries:	Crude oil production, petroleum refining	All-time WC Ranking:	44	26/32
Capital City:	Riyadh	MSCI Classification:	Emerging Market	Average Player Age:	27.6	13/32
Currency:	Saudi riyal	Stock Market Tot. Return:	12.7%	Total Squad Value:	\$28,738,060	29/32
Life Expectancy (Yrs):	75.1	(5yr annualized, ETF proxy)		Player to Watch:	Salem al-Dawsari	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

GROUP C - MEXICO, POLAND & FIXTURES

Mexico

Mexico will be aspiring to break the curse which has seen them fail at the last 16 stage of the World Cup on their last 8 attempts in a row. Mexico have made the most appearances at the World Cup finals tournament without actually winning the trophy. They have one of the older squads, so this likely a final chance for many players before much of the squad turns over prior to 2026 (which Mexico is jointly hosting). Mexico is the third most populous country and has the lowest unemployment print out of any of the Latin American countries at the World Cup.

The Country		The Economy		The Team		2022 WC Rank
Region:	North America	GDP Per Capita:	\$17,900	World Ranking:	13	12/32
Area (Sq KM):	1,964,375	Unemployment rate:	4.4%	Prior WC Appearances:	16	4/32
Population:	131,500,000	Natural Resources:	Petroleum, silver, copper	Prior Best WC Performance:	Quarterfinals (1970*, 1986*) *Hosts	
Language:	Spanish (de facto)	Main Industries:	Food and beverages, tobacco, chemicals, steel	All-time WC Ranking:	14	11/32
Capital City:	Mexico City	MSCI Classification:	Emerging Market	Average Player Age:	28	6/32
Currency:	Mexican peso	Stock Market Tot. Return:	3.2%	Total Squad Value:	\$181,291,500	20/32
Life Expectancy (Yrs):	75.1	(5yr annualized, ETF proxy)		Player to Watch:	Hirving Lozano	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Poland

Poland and Mexico face a critical battle in the first group game, with the winner standing a great chance to progress. Poland rely heavily on their all-time record goal scorer, Robert Lewandowski, who plays his club football for Barcelona. Unless he is firing on all cylinders, they may find they lack the quality throughout their team to progress far in the tournament. Poland's stock market has also lacked quality in its returns over the past 5 years, with a -10% annualized return, the worst among the markets we were able to track through ETF proxies.

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$32,200	World Ranking:	26	22/32
Area (Sq KM):	312,685	Unemployment rate:	3.4%	Prior WC Appearances:	8	15/32
Population:	38,100,000	Natural Resources:	Coal, sulfur, copper, natural gas	Prior Best WC Performance:	Third place (1974, 1982)	
Language:	Polish	Main Industries:	Machine building, iron and steel, coal mining	All-time WC Ranking:	15	12/32
Capital City:	Warsaw	MSCI Classification:	Emerging Market	Average Player Age:	27.7	10/32
Currency:	Polish zloty	Stock Market Tot. Return:	-10.3%	Total Squad Value:	\$264,282,720	17/32
Life Expectancy (Yrs):	78.7	(5yr annualized, ETF proxy)		Player to Watch:	Robert Lewandowski	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Fixtures

Group Stage									
Game #	Day	Date	Time	Team 1	Score	Team 2			
5	Tue	Nov 22, 2022	5:00 E.T	Argentina 		Saudi Arabia 			
7	Tue	Nov 22, 2022	11:00 E.T	Mexico 		Poland 			
22	Sat	Nov 26, 2022	8:00 E.T	Poland 		Saudi Arabia 			
24	Sat	Nov 26, 2022	14:00 E.T	Argentina 		Mexico 			
39	Wed	Nov 30, 2022	14:00 E.T	Poland 		Argentina 			
40	Wed	Nov 30, 2022	14:00 E.T	Saudi Arabia 		Mexico 			

GROUP D - PREVIEW, FRANCE & AUSTRALIA

Group D contains the defending champions France, who are favorites to not only win the group but one of the favorites for the whole cup. They will have to overcome the poor record that has plagued the defending champions, with the last time the trophy was successfully defended by Brazil in 1962, and no defending champions getting past the group stage since 2006, again Brazil. A solid Denmark team will be looking to make it into the second round but Australia and Tunisia will fancy their chances of snatching second place. The group D countries, with three developed markets, have the highest average GDP per capita, the second highest average stock market returns over the past 5 years and the second highest average life expectancy from any group.

France

France manager Didier Deschamps is the longest serving manager at the World Cup but he has the defending champions coming into the World Cup in poor form. They have only won one of their past six games, not exactly inspiring confidence that they can avoid the fate of four of the last five defending champions, of going out in the group stage. France are one of only three teams with a combined value of over \$1 billion (with England and Brazil). Kylian Mbappe remains their player to watch and amazingly for a 23 year old already has 28 goals for France, in 2018 he was also the first teenager to score in the World Cup final since Pele in 1958.

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$42,000	World Ranking:	4	4/32
Area (Sq KM):	643,801	Unemployment rate:	8.1%	Prior WC Appearances:	15	5/32
Population:	68,300,000	Natural Resources:	Coal, iron ore, bauxite, zinc	Prior Best WC Performance:	Champions (1998*, 2018) *Hosts	
Language:	French	Main Industries:	Machinery, chemicals, automobiles	All-time WC Ranking:	5	4/32
Capital City:	Paris	MSCI Classification:	Developed Market	Average Player Age:	27.3	17/32
Currency:	Euro	Stock Market Tot. Return:	3.6%	Total Squad Value:	\$1,146,836,600	3/32
Life Expectancy (Yrs):	82.7	(5yr annualized, ETF proxy)		Player to Watch:	Kylian Mbappe	

Sources: LPL Research, Factsset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Australia

Australia scraped into the World Cup via the playoffs after a qualifying campaign during which they had to play most of their games outside of Australia due to the COVID-19 Pandemic. The "Socceroos" will look at this group and think that at least second place is there for the taking. 18 Year old Garang Kuol, who will join English Premier League side Newcastle United after the World Cup, could be a player to watch with his pace and skill likely to worry many defenders. Australia is the fourth largest country by area of all the teams at the World Cup. It has an enormous wealth of natural resources and is the world's largest net exporter of coal, accounting for 29% of global coal exports.

The Country		The Economy		The Team		2022 WC Rank
Region:	Australia and Oceania	GDP Per Capita:	\$48,700	World Ranking:	38	26/32
Area (Sq KM):	7,741,220	Unemployment rate:	5.1%	Prior WC Appearances:	5	19/32
Population:	26,100,000	Natural Resources:	Alumina, coal, iron ore, copper, tin	Prior Best WC Performance:	Last 16 (2006)	
Language:	English (de facto)	Main Industries:	Mining, industrial, transportation	All-time WC Ranking:	49	29/32
Capital City:	Canberra	MSCI Classification:	Developed Market	Average Player Age:	27.9	7/32
Currency:	Australian dollar	Stock Market Tot. Return:	3.9%	Total Squad Value:	\$40,018,420	28/32
Life Expectancy (Yrs):	83.4	(5yr annualized, ETF proxy)		Player to Watch:	Garang Kuol	

Sources: LPL Research, Factsset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

GROUP D - DENMARK, TUNISIA & FIXTURES

Denmark

Denmark have a solid core of players, the majority of which are still around from the team that took them to the semifinals of the European Championships last summer. No real superstars on the team but, like Australia, they will be keening eyeing up the second place spot in the group. Denmark is the fourth richest country at the World Cup, as measured by GDP per capita, and their stock market has seen strong returns over the past 5 years (the best of any European Nation). Denmark produces a substantial proportion of the world's wind turbines and around half of their domestic electricity supply comes from wind power.

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$55,900	World Ranking:	10	9/32
Area (Sq KM):	43,094	Unemployment rate:	4.8%	Prior WC Appearances:	5	19/32
Population:	5,900,000	Natural Resources:	Petroleum, natural gas, fish	Prior Best WC Performance:	Quarterfinals (1998)	
Language:	Danish	Main Industries:	Wind turbines, pharmaceuticals, medical	All-time WC Ranking:	23	16/32
Capital City:	Copenhagen	MSCI Classification:	Developed Market	Average Player Age:	27.7	10/32
Currency:	Danish krone	Stock Market Tot. Return:	8.6%	Total Squad Value:	\$396,424,080	11/32
Life Expectancy (Yrs):	80.9	(5yr annualized, ETF proxy)		Player to Watch:	Pierre-Emile Højbjerg	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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Tunisia

Tunisia will be hoping to finally get out of the group stage having failed on their previous five attempts. Little is expected from them in this tough group but they could get a surprise result or two given their strength defensively. Scoring goals has proven more difficult but Youssef Msakni, who plays for Al Arabi in the Qatar stars domestic league, is their player to watch. Tunisia has the second highest level of unemployment from countries at this World Cup, with a domestic economy than relies heavily on tourism.

The Country		The Economy		The Team		2022 WC Rank
Region:	Africa	GDP Per Capita:	\$9,700	World Ranking:	30	24/32
Area (Sq KM):	163,610	Unemployment rate:	16.8%	Prior WC Appearances:	5	19/32
Population:	11,900,000	Natural Resources:	Petroleum, phosphates, iron ore	Prior Best WC Performance:	Group Stage (1978, 1998, 2002, 2006, 2018)	
Language:	TunisianArabic, French	Main Industries:	Petroleum, mining, tourism, textiles	All-time WC Ranking:	47	27/32
Capital City:	Tunis	MSCI Classification:	Frontier Market	Average Player Age:	27.2	20/32
Currency:	Tunisian dinar	Stock Market Tot. Return:	No ETF Proxy Available	Total Squad Value:	\$58,281,860	27/32
Life Expectancy (Yrs):	76.7	(5yr annualized, ETF proxy)		Player to Watch:	Youssef Msakni	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Fixtures

Group Stage									
Game #	Day	Date	Time	Team 1	Score	Team 2			
6	Tue	Nov 22, 2022	8:00 E.T	Denmark 		Tunisia 			
8	Tue	Nov 22, 2022	14:00 E.T	France 		Australia 			
21	Sat	Nov 26, 2022	5:00 E.T	Tunisia 		Australia 			
23	Sat	Nov 26, 2022	11:00 E.T	France 		Denmark 			
37	Wed	Nov 30, 2022	10:00 E.T	Australia 		Denmark 			
38	Wed	Nov 30, 2022	10:00 E.T	Tunisia 		France 			

GROUP E - PREVIEW, SPAIN & COSTA RICA

A contender for this World Cup's 'Group of Death', group E is the only one that contains two teams that have previously won the World Cup, Germany, and Spain. The matchup between these two will be one of the highlights of the group stage. By world rankings this is the second hardest group, showing that Costa Rica and Japan won't just be there to make up the numbers, and especially the latter will be hopeful of pulling off a surprise result. Whoever wins this group will face the second place team from Group F and will likely fancy their chances of making it to the quarterfinals. This group has the highest cumulative value of players, though mostly down to Germany and Spain having over \$900 million of talent each. This group of countries has the highest average life expectancy from any group at the World Cup but also has the highest unemployment rate (thanks mostly to Spain and Costa Rica's contributions). This group contains two economic powerhouses in Germany and Japan but the combined stock market performance of these countries (and Spain) over the past 5 years was the worst of any of the World Cup groups.

Spain

Spain have been reimagined personnel-wise since winning the World Cup for the first, and only, time in 2010 but they still play with a similar possession based style. That's perhaps not surprising as they still have 34 year old Sergio Busquets pulling the strings in the midfield, who lifted the cup back in South Africa in 2010. In front of him is the new generation of Spanish midfield, with 19 year old Pedri the one to watch. Spain has the highest unemployment of any of the European countries at the World Cup (and actually the highest of any member of the European Union (EU) at present).

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$36,200	World Ranking:	7	6/32
Area (Sq KM):	505,370	Unemployment rate:	14.7%	Prior WC Appearances:	15	5/32
Population:	48,600,000	Natural Resources:	Coal, lignite, iron ore, copper, lead	Prior Best WC Performance:	Champions (2010)	
Language:	Spanish	Main Industries:	Textiles, food and beverages, metals	All-time WC Ranking:	7	6/32
Capital City:	Madrid	MSCI Classification:	Developed Market	Average Player Age:	26.2	28/32
Currency:	Euro	Stock Market Tot. Return:	-3.7%	Total Squad Value:	\$931,704,020	5/32
Life Expectancy (Yrs):	83.6	(5yr annualized, ETF proxy)		Player to Watch:	Pedri	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Costa Rica

Costa Rica snuck into the World Cup via a playoff win versus New Zealand. There are a number of players left over from the team that surprised by getting to the quarterfinals in 2014 but even so there aren't many household names. In fact, the value of the entire squad is the third lowest at the World Cup. 18 year old Jewison Bennette who plays in England for Sunderland could be one to watch. Costa Rica has the fourth lowest population of any of the countries at the World Cup. The country also has the highest unemployment rate.

The Country		The Economy		The Team		2022 WC Rank
Region:	Central America	GDP Per Capita:	\$19,700	World Ranking:	31	25/32
Area (Sq KM):	51,100	Unemployment rate:	18.0%	Prior WC Appearances:	5	19/32
Population:	5,200,000	Natural Resources:	Hydropower	Prior Best WC Performance:	Quarterfinals (2014)	
Language:	Spanish	Main Industries:	Medical equipment, food processing, textiles	All-time WC Ranking:	31	20/32
Capital City:	San José	MSCI Classification:	Not Classified by MSCI	Average Player Age:	27.7	10/32
Currency:	Costa Rican colón	Stock Market Tot. Return:	No ETF Proxy Available	Total Squad Value:	\$18,934,890	30/32
Life Expectancy (Yrs):	80.3	(5yr annualized, ETF proxy)		Player to Watch:	Jewison Bennette	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

GROUP E - GERMANY, JAPAN & FIXTURES

Germany

Germany will be seeking World Cup redemption after finishing bottom of their group as defending champions in Russia in 2018 and losing in the last 16 of the European championships in 2021. World Cup winning, and long standing coach, Joachim Low has been replaced by Hansi Flick, who arrived after a successful period at Bayern Munich. This Germany team still has survivors from the team that won in 2014 but also plenty of exciting young talent like Jamal Musiala and Youssoufa Moukoko (the youngest player at the tournament). Germany has the second most appearances at World Cups and has won four times, only trailing Brazil in the all-time World Cup rankings. Germany had the third worst stock market performance over the past 5 years of all the countries at the World Cup.

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$50,900	World Ranking:	11	10/32
Area (Sq KM):	357,022	Unemployment rate:	3.5%	Prior WC Appearances:	19	2/32
Population:	79,800,000	Natural Resources:	Coal, lignite, natural gas, iron ore	Prior Best WC Performance:	Champions (1954, 1974*, 1990, 2014) *Hosts	
Language:	German	Main Industries:	Machinery, vehicles, machine tools, electronics	All-time WC Ranking:	2	2/32
Capital City:	Berlin	MSCI Classification:	Developed Market	Average Player Age:	27.3	17/32
Currency:	Euro	Stock Market Tot. Return:	-3.5%	Total Squad Value:	\$914,783,480	6/32
Life Expectancy (Yrs):	81.3	(5yr annualized, ETF proxy)		Player to Watch:	Jamal Musiala	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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Japan ●

Japan can play a nice counter attacking game so could be dangerous for the other members of the Group unless they can transition quickly to defense after enjoying the possession that Germany and Spain no doubt will. This approach has led to a lack of goals in qualifying but in spite of this they will see 2022 as a decent chance to go past the last 16 for the first time. Japan has the fourth highest population of any of the countries at the World Cup, as well as the highest life expectancy and the second lowest level of unemployment.

The Country		The Economy		The Team		2022 WC Rank
Region:	East and Southeast Asia	GDP Per Capita:	\$41,400	World Ranking:	24	21/32
Area (Sq KM):	377,915	Unemployment rate:	2.8%	Prior WC Appearances:	6	18/32
Population:	124,500,000	Natural Resources:	Fish, Arable land, lumber	Prior Best WC Performance:	Last 16 (2002, 2010, 2018)	
Language:	Japanese	Main Industries:	Motor vehicles, electronics, machine tools	All-time WC Ranking:	30	19/32
Capital City:	Tokyo	MSCI Classification:	Developed Market	Average Player Age:	28.2	5/32
Currency:	Japanese yen	Stock Market Tot. Return:	-0.3%	Total Squad Value:	\$157,656,460	24/32
Life Expectancy (Yrs):	84.6	(5yr annualized, ETF proxy)		Player to Watch:	Daichi Kamada	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Fixtures

Group Stage									
Game #	Day	Date	Time	Team 1	Score	Score	Team 2		
10	Wed	Nov 23, 2022	8:00 E.T	Germany 			Japan 		
11	Wed	Nov 23, 2022	11:00 E.T	Spain 			Costa Rica 		
25	Sun	Nov 27, 2022	5:00 E.T	Japan 			Costa Rica 		
28	Sun	Nov 27, 2022	14:00 E.T	Spain 			Germany 		
43	Thu	Dec 1, 2022	14:00 E.T	Japan 			Spain 		
44	Thu	Dec 1, 2022	14:00 E.T	Costa Rica 			Germany 		

GROUP F - PREVIEW, BELGIUM & CANADA

If there is a “group of life” in this World Cup then it is probably group F. This group has the second lowest average world ranking of all groups, the second fewest combined prior appearances, and the second worst all-time World Cup ranking. Highly ranked Belgium and Croatia (who made the final last time out) will be very confident of making it into the last 16, against a Canada team making just their second appearance, and a Morocco side who have only got out of the group once in five attempts. Geographically, this group has the largest combined area (thanks to Canada’s immense land mass), but has the second smallest total population. The group also ranks well for average life expectancy.

Belgium

Belgium’s golden generation get what will probably be their final World Cup campaign to try to justify the “Red Devils” lofty world ranking. They currently sit second in the latest rankings and are the highest ranked team that has never won a World Cup. They also have the second most appearances at the World Cup without ever winning (behind only Mexico). They ranked as the third oldest squad at the tournament. Last World Cup was their best ever, finishing with a win over England in the third place playoff. Belgium is one of the world’s leading processors of cobalt, radium, copper, zinc, and lead

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$48,200	World Ranking:	2	2/32
Area (Sq KM):	30,528	Unemployment rate:	6.4%	Prior WC Appearances:	13	8/32
Population:	11,900,000	Natural Resources:	Silica sand, carbonates, arable land	Prior Best WC Performance: Third place (2018)		
Language:	Dutch, French, German	Main Industries:	Engineering, metal products, motor vehicles	All-time WC Ranking:	11	9/32
Capital City:	Brussels	MSCI Classification:	Developed Market	Average Player Age:	28.3	3/32
Currency:	Euro	Stock Market Tot. Return:	-1.8%	Total Squad Value:	\$581,744,280	9/32
Life Expectancy (Yrs):	81.6	(5yr annualized, ETF proxy)		Player to Watch: Kevin De Bruyne		

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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Canada

A young Canadian team makes just their second ever appearance at the World Cup, with their only prior showing all the way back in 1986 when they failed to get out of the group stage. Canada has fitness worries over their best player, Alphonso Davies after he picked up an injury while playing for Bayern Munich in Germany. In terms of land area, Canada is the largest country at the World Cup and it has immense natural resources. Canada is the world’s fourth largest producer of aluminum (and the largest of any country at the World Cup with China, India and Russia making up the top three). Canada is the world’s largest producer of potash, a key component in fertilizer. Canada’s stock market has performed well over the last 5 years with almost a 6% annual return.

The Country		The Economy		The Team		2022 WC Rank
Region:	North America	GDP Per Capita:	\$45,900	World Ranking:	41	27/32
Area (Sq KM):	9,984,670	Unemployment rate:	7.5%	Prior WC Appearances:	1	30/32
Population:	38,300,000	Natural Resources:	Bauxite, iron ore, nickel, potash	Prior Best WC Performance: Group Stage (1986)		
Language:	English, French	Main Industries:	Transportation equipment, chemicals, minerals	All-time WC Ranking:	72	31/32
Capital City:	Ottawa	MSCI Classification:	Developed Market	Average Player Age:	25.7	29/32
Currency:	Canadian dollar	Stock Market Tot. Return:	5.6%	Total Squad Value:	\$63,653,460	26/32
Life Expectancy (Yrs):	82.4	(5yr annualized, ETF proxy)		Player to Watch: Alphonso Davies		

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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GROUP F - MOROCCO, CROATIA & FIXTURES

Morocco

Morocco are the second highest ranked African team at the World Cup and while not packed with world beaters, the “Atlas Lions” could fancy picking up enough points from games versus Canada and Croatia to advance to the second round. Hakim Ziyech has been included in their squad and could have something to prove following his lack of game time at his club in Chelsea, in England. Morocco has the fourth lowest GDP per capita of all the countries at the World Cup. One of the main industries in phosphate mining and processing.

The Country		The Economy		The Team		2022 WC Rank
Region:	Africa	GDP Per Capita:	\$6,900	World Ranking:	22	20/32
Area (Sq KM):	716,550	Unemployment rate:	11.5%	Prior WC Appearances:	5	19/32
Population:	36,200,000	Natural Resources:	Phosphates, iron ore, manganese,	Prior Best WC Performance: Last 16 (1986)		
Language:	Arabic, Tamazight	Main Industries:	Automotive parts, mining, food processing	All-time WC Ranking:	43	25/32
Capital City:	Rabat	MSCI Classification:	Frontier Market	Average Player Age:	26.8	25/32
Currency:	Moroccan dirham	Stock Market Tot. Return:	No ETF Proxy Available	Total Squad Value:	\$259,985,440	18/32
Life Expectancy (Yrs):	76.7	(5yr annualized, ETF proxy)		Player to Watch: Hakim Ziyech		

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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Croatia

For a country of only four million people Croatia has been punching above their weight ever since their World Cup debut in 1998 saw them finish in third place. The fact they are 22nd in the all-time World Cup rankings despite only having a team as an independent nation for a little over 30 years is testament to this. Croatia got all the way to the final four years ago before succumbing to France in the rain in Moscow. While the overall Croatia squad age isn't too far above average, it's still a slight concern that their key man is 37 year old Luka Modric, who plays for Real Madrid in Spain. Croatia has been an EU member since 2013 and will join the Euro single currency in 2023, the first new member of the Eurozone since Lithuania in 2015.

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$26,500	World Ranking:	12	11/32
Area (Sq KM):	56,594	Unemployment rate:	8.7%	Prior WC Appearances:	5	19/32
Population:	4,200,000	Natural Resources:	Oil, some coal, bauxite, iron ore,	Prior Best WC Performance: Runners-up (2018)		
Language:	Croatian	Main Industries:	Chemicals, plastics, machine tools	All-time WC Ranking:	22	15/32
Capital City:	Zagreb	MSCI Classification:	Frontier Market	Average Player Age:	27.9	7/32
Currency:	Croatian kuna	Stock Market Tot. Return:	No ETF Proxy Available	Total Squad Value:	\$390,515,320	12/32
Life Expectancy (Yrs):	78.5	(5yr annualized, ETF proxy)		Player to Watch: Luka Modric		

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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Fixtures

Group Stage									
Game #	Day	Date	Time	Team 1	Score	Team 2			
9	Wed	Nov 23, 2022	5:00 E.T	Morocco 		Croatia 			
12	Wed	Nov 23, 2022	14:00 E.T	Belgium 		Canada 			
26	Sun	Nov 27, 2022	8:00 E.T	Belgium 		Morocco 			
27	Sun	Nov 27, 2022	11:00 E.T	Croatia 		Canada 			
41	Thu	Dec 1, 2022	10:00 E.T	Croatia 		Belgium 			
42	Thu	Dec 1, 2022	10:00 E.T	Canada 		Morocco 			

GROUP G - PREVIEW, BRAZIL & SERBIA

Group G is the other contender for the “Group of Death”, containing the most successful team in the history of the World Cup, Brazil, along with three other solid contenders, Serbia, Switzerland and Cameroon, who will all be aiming to reach at least the last 16. The group combined has the most prior World Cup appearances and the best average all-time World Cup ranking out of any group at this World Cup (thanks to an outsized contribution from Brazil’s stats). This group has the second highest total squad value out of any group, also mostly contributed to by Brazil’s superstars. Brazil will be looking to bring the World Cup back to South America for the first time since 2002, with the current run of European winners (four) the longest streak in the competitions history. This group has the second highest combined population (also thanks to Brazil) but also the lowest average life expectancy.

Brazil

Brazil and the World Cup go hand in hand so it’s no surprise that the “Samba Boys” have won the World Cup more times than any other team (five) and are the only team to have been present at every World Cup finals tournament (22 from 1930 to 2022). Quite simply Brazil are World Cup machines; they have finished top of their group at every edition since 1982, and the last time they were eliminated in the group stage was in 1966. Brazil are many pundits favorites to win again in 2022, so anything less than the semifinals will be a disaster as many of the oldest squads at the tournament may not get another chance. Brazil’s team is one of only three at the tournament to be valued at over \$1 billion (Along with England and France). Brazil is the economic powerhouse of South America, with its largest population and the second most of any country at the World Cup. Brazil is the world’s leading producer of tin, iron ore, and phosphate.

The Country		The Economy		The Team		2022 WC Rank
Region:	South America	GDP Per Capita:	\$14,100	World Ranking:	1	1/32
Area (Sq KM):	8,515,770	Unemployment rate:	14.4%	Prior WC Appearances:	21	1/32
Population:	214,600,000	Natural Resources:	Tin, iron ore and phosphate	Prior Best WC Performance:	Champions (1958, 1962, 1970, 1994, 2002)	
Language:	Portuguese	Main Industries:	Textiles, lumber, iron ore, tin, steel	All-time WC Ranking:	1	1/32
Capital City:	Brasilia	MSCI Classification:	Emerging Market	Average Player Age:	28.4	1/32
Currency:	Brazilian real	Stock Market Tot. Return:	-1.3%	Total Squad Value:	\$1,171,814,540	2/32
Life Expectancy (Yrs):	75.9	(5yr annualized, ETF proxy)		Player to Watch:	Vinicius Junior	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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Serbia

Serbia inherited some impressive stats as the successor to the former Yugoslavia data (who got third place in 1930 and 1962), but competing as an independent nation they has never qualified out of the group stage in three attempts. In Aleksandar Mitrović they have a striker who has been on good form for his club side, Fulham, in the English Premier League, and thanks to his physicality could pose a problem for many defenders. Serbia is one of the world’s largest producers of raspberries.

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$18,200	World Ranking:	21	19/32
Area (Sq KM):	77,474	Unemployment rate:	11.8%	Prior WC Appearances:	12	10/32
Population:	6,900,000	Natural Resources:	Oil, gas, coal, iron ore	Prior Best WC Performance:	Fourth place (1930, 1962)	
Language:	Serbian	Main Industries:	Automobiles, base metals, furniture	All-time WC Ranking:	13	10/32
Capital City:	Belgrade	MSCI Classification:	Frontier Market	Average Player Age:	27.4	16/32
Currency:	Serbian dinar	Stock Market Tot. Return:	No ETF Proxy Available	Total Squad Value:	\$369,028,920	13/32
Life Expectancy (Yrs):	76.0	(5yr annualized, ETF proxy)		Player to Watch:	Aleksandar Mitrović	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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GROUP G - SWITZERLAND, CAMEROON & FIXTURES

Switzerland

Switzerland team performed strongly in the qualification for the World Cup, not losing a game and topping a group that also included Italy (who amazingly then lost in the playoffs to North Macedonia). Switzerland makes good use of the players they have available to them, fitting and working together almost as well as a Swiss watch (making watches is one of the country's biggest industries). Even equaling their prior best of the quarterfinals would be a massive result for the Swiss. Switzerland is the second richest country at the World Cup as measured by GDP per capita, behind only Qatar. Its annual stock market return over the past 5 years was a handy 6.2%.

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$68,400	World Ranking:	15	14/32
Area (Sq KM):	41,277	Unemployment rate:	5.3%	Prior WC Appearances:	11	11/32
Population:	8,500,000	Natural Resources:	Hydropower potential, timber, salt	Prior Best WC Performance:	Quarterfinals (1934, 1938, 1954*) *Hosts	
Language:	French, German, Italian	Main Industries:	Machinery, chemicals, watches, Banking	All-time WC Ranking:	18	14/32
Capital City:	Bern	MSCI Classification:	Developed Market	Average Player Age:	27.5	14/32
Currency:	Swiss franc	Stock Market Tot. Return:	6.2%	Total Squad Value:	\$290,334,980	15/32
Life Expectancy (Yrs):	83.8	(5yr annualized, ETF proxy)		Player to Watch:	Noah Okafor	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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Cameroon

The “Indomitable Lions” head into their 8th World Cup hoping to channel the spirit of Roger Milla, who at the age of 38 inspired them to the quarterfinals with four goals at the 1990 World Cup in Italy. Scoring has been more of a problem recently, drawing blanks in five of their last nine games. They will be rank outsiders in this group but will fancy themselves to have enough quality to take points off Serbia and Switzerland. Their goalkeeper, André Onana, who player for Inter Milan in Italy, may be their key man to snatching something from those games, especially with the lack of potency up front. Cameroon has the lowest life expectancy of any country at the World Cup, more than 25 years less than Japan, which has the highest. No doubt the country's poor economic situation a contributor, Cameroon has the second lowest GDP per capital of all the countries participating in the World Cup.

The Country		The Economy		The Team		2022 WC Rank
Region:	Africa	GDP Per Capita:	\$3,600	World Ranking:	43	28/32
Area (Sq KM):	475,440	Unemployment rate:	3.9%	Prior WC Appearances:	7	16/32
Population:	29,300,000	Natural Resources:	Petroleum, bauxite, iron ore, timber	Prior Best WC Performance:	Quarterfinals (1990)	
Language:	English, French	Main Industries:	Petroleum, aluminum, food processing	All-time WC Ranking:	33	21/32
Capital City:	Yaoundé	MSCI Classification:	Not Classified by MSCI	Average Player Age:	26.8	25/32
Currency:	Central African CFA franc	Stock Market Tot. Return:	No ETF Proxy Available	Total Squad Value:	\$160,879,420	23/32
Life Expectancy (Yrs):	59.3	(5yr annualized, ETF proxy)		Player to Watch:	André Onana	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
Past performance is no guarantee of future results.

Fixtures

Group Stage						
Game #	Day	Date	Time	Team 1	Score	Team 2
13	Thu	Nov 24, 2022	5:00 E.T	Switzerland 		Cameroon 
16	Thu	Nov 24, 2022	14:00 E.T	Brazil 		Serbia 
29	Mon	Nov 28, 2022	5:00 E.T	Cameroon 		Serbia 
31	Mon	Nov 28, 2022	11:00 E.T	Brazil 		Switzerland 
47	Fri	Dec 2, 2022	14:00 E.T	Serbia 		Switzerland 
48	Fri	Dec 2, 2022	14:00 E.T	Cameroon 		Brazil 

GROUP H - PREVIEW, PORTUGAL & GHANA

The final group H brings together some strong candidates, Cristiano Ronaldo's Portugal, two-time World Cup winners Uruguay, as well as South Korea and Ghana. Much like his arch rival Lionel Messi, this will likely be Cristiano Ronaldo's last World Cup so he will be keen to take his last chance to hog the limelight on the world stage. Ronaldo's club form this season has been inconsistent, which contributes to making this group one of the hardest to call, with all 4 teams honestly capable of either finishing top or bottom of the group. The group has the second worst average world ranking but has the third most valuable squads of players. Geographically, this group has the second smallest area and the third smallest combined population. It is also the poorest group, with an average based on GDP per capita of just over \$25,000, although it does have the second lowest average unemployment rate of all the groups.

Portugal

No doubt all the talk will be all about Cristiano Ronaldo again at this World Cup for Portugal, whether they decide that his best use is starting games or an impact sub. 37 year only Ronaldo has indicated that he wishes to continue playing for the national team until the next European championship in 2024 so its not out of the question that he could return in 2026, much will depend on the next stop in his club career given his time at Manchester United appears to be coming to a sour end. Portugal are not the one man team they used to be and have a number of other big club players. They will be expecting to clear the group phase with the fourth most valuable squad in the tournament. Portugal is the biggest cork producer in the world and produces more than 50% of the world's cork supply.

The Country		The Economy		The Team		2022 WC Rank
Region:	Europe	GDP Per Capita:	\$32,200	World Ranking:	9	8/32
Area (Sq KM):	92,090	Unemployment rate:	6.6%	Prior WC Appearances:	7	16/32
Population:	10,300,000	Natural Resources:	Fish, forests (cork), iron ore,	Prior Best WC Performance:	Third place (1966)	
Language:	Portuguese	Main Industries:	Textiles, chemicals, fuels, automobiles	All-time WC Ranking:	17	13/32
Capital City:	Lisbon	MSCI Classification:	Developed Market	Average Player Age:	27.3	17/32
Currency:	Euro	Stock Market Tot. Return:	-0.1%	Total Squad Value:	\$967,962,320	
Life Expectancy (Yrs):	82.0	(5yr annualized, ETF proxy)		Player to Watch:	Cristiano Ronaldo	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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Ghana

This young Ghana side come into the tournament as the lowest ranked team. After a poor African Cup of Nations campaign in 2021, they qualified from a playoff with Nigeria barely scraping by on the away goals rule. Ghana were the last African side to make it through to the World Cup quarterfinal, versus Uruguay in 2010, and will still not have forgotten the Luis Suárez handball that helped to thwart them becoming the first African semifinalists. Expect to see some wild celebrations if they beat Uruguay this time, especially if Suárez is involved. Ghana has the third lowest GDP per capita of countries at the World Cup and the second lowest life expectancy.

The Country		The Economy		The Team		2022 WC Rank
Region:	Africa	GDP Per Capita:	\$5,300	World Ranking:	61	32/32
Area (Sq KM):	238,533	Unemployment rate:	4.7%	Prior WC Appearances:	3	27/32
Population:	31,000,000	Natural Resources:	Gold, timber, diamonds, bauxite	Prior Best WC Performance:	Quarterfinals (2010)	
Language:	English	Main Industries:	Mining, lumbering, light manufacturing	All-time WC Ranking:	37	22/32
Capital City:	Accra	MSCI Classification:	Not Classified by MSCI	Average Player Age:	25.7	29/32
Currency:	Ghana cedi	Stock Market Tot. Return:	No ETF Proxy Available	Total Squad Value:	\$211,103,880	
Life Expectancy (Yrs):	64.1	(5yr annualized, ETF proxy)		Player to Watch:	Iñaki Williams	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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GROUP H - URUGUAY, SOUTH KOREA & FIXTURES

Uruguay

Uruguay are two time World Cup winners, but the last of these came in 1950. Its customary for prior winners to add a star above their crest on the team shirts for every World Cup triumph yet Uruguay has four stars as they argue that the 1924 and 1928 Olympics were de facto World Cups (before the first official cup in 1930 that Uruguay won). The present day team has an intriguing mix of youth and experience; with the average age of the squad, the third oldest, pushed up by a number of players onto their fourth World Cup (veterans of a fourth place finish in 2010). A perfect example is up front where the aging strikers Luis Suárez and Edinson Cavani (both 35) are complemented by the physical Darwin Núñez (23) of Liverpool in the English Premier League. Uruguay has an amazing array of talent for a country with only 3.4 million people, the third smallest at this World Cup and the smallest of any winning nation.

The Country		The Economy		The Team		2022 WC Rank
Region:	South America	GDP Per Capita:	\$21,600	World Ranking:	14	13/32
Area (Sq KM):	176,215	Unemployment rate:	10.4%	Prior WC Appearances:	13	8/32
Population:	3,400,000	Natural Resources:	Arable land, hydropower, fish	Prior Best WC Performance:	Champions (1930*, 1950) *Hosts	
Language:	Spanish (de facto)	Main Industries:	Food processing, machinery, transportation	All-time WC Ranking:	9	8/32
Capital City:	Montevideo	MSCI Classification:	Not Classified by MSCI	Average Player Age:	28.3	3/32
Currency:	Uruguayan peso	Stock Market Perf. (10yr):	No ETF Proxy Available	Total Squad Value:	\$465,986,300	10/32
Life Expectancy (Yrs):	77.9	Total Market Cap:		Player to Watch:	Darwin Núñez	

Sources: LPL Research, Factset, CIA World Factbook, World Bank, Economic Research Service, FIFA.com, TransferMkt.com. 11/10/2022
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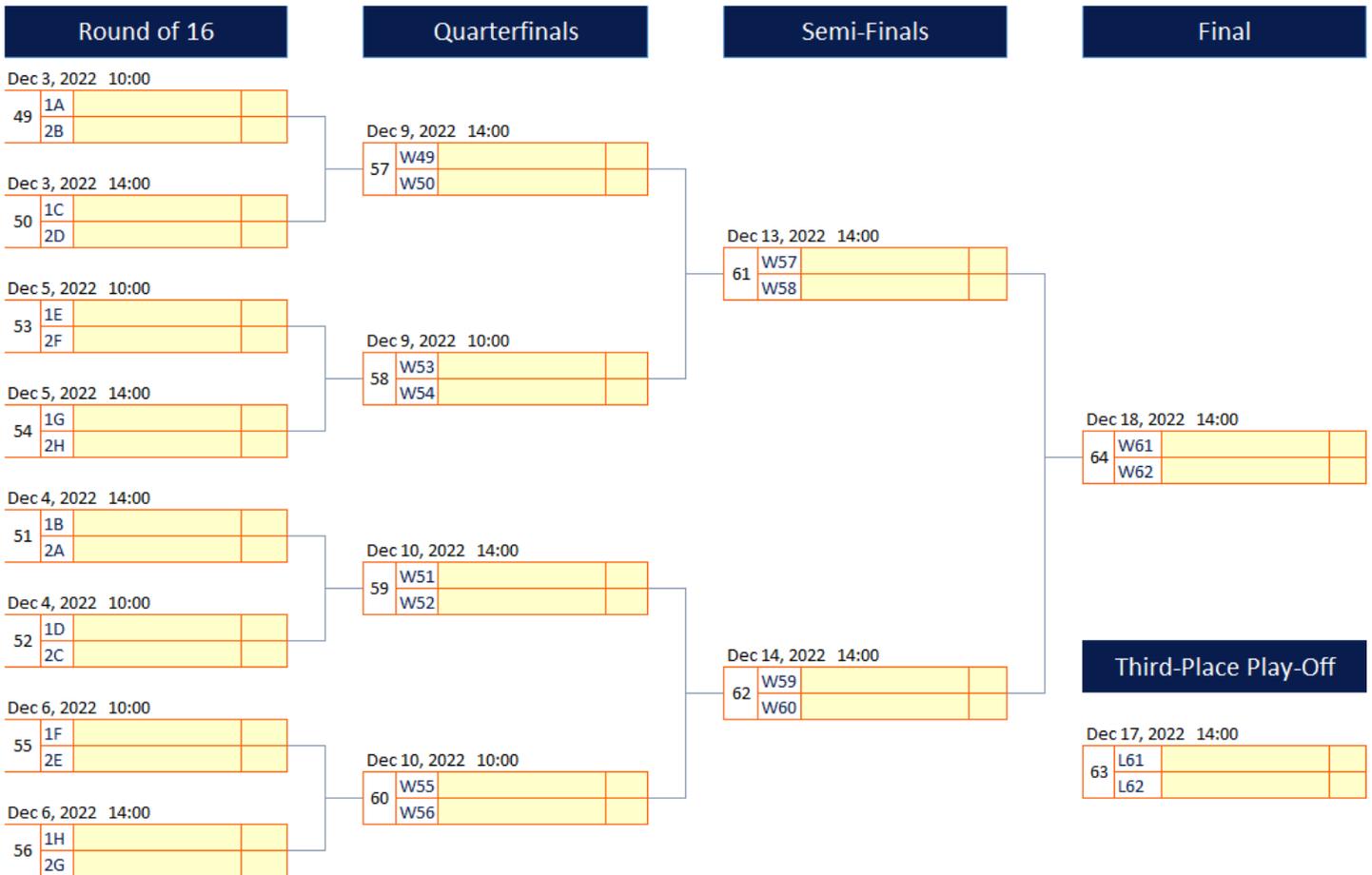
South Korea

South Korea has qualified for every tournament since 1986, and when they hosted it (jointly with Japan) in 2002 they even made it to the semifinals. This streak is the longest of any team outside of Europe or South America, and the “Taeguk Warriors” are probably the Asian team that most of the European and South American giants would have most wanted to avoid. They have a bona fide superstar in Son Heung-min who plays for Tottenham Hotspur in the English Premier League. The South Korean economy is fueled by the electronics, telecommunications and automobile giants that are based there; this leads to one of the highest GDPs per capita in the Asia region and the highest from the teams in this group at the World Cup.

The Country		The Economy		The Team		2022 WC Rank
Region:	East and Southeast Asia	GDP Per Capita:	\$42,300	World Ranking:	28	23/32
Area (Sq KM):	99,720	Unemployment rate:	3.5%	Prior WC Appearances:	10	12/32
Population:	51,900,000	Natural Resources:	Coal, tungsten, graphite	Prior Best WC Performance:	Fourth place (2002*) *Hosts	
Language:	Korean	Main Industries:	Electronics, telecommunications, automobiles	All-time WC Ranking:	28	18/32
Capital City:	Seoul	MSCI Classification:	Emerging Market	Average Player Age:	27.9	7/32
Currency:	South Korean won	Stock Market Tot. Return:	-3.0%	Total Squad Value:	\$167,325,340	21/32
Life Expectancy (Yrs):	83.0	(5yr annualized, ETF proxy)		Player to Watch:	Son Heung-min	

Fixtures

KNOCKOUT ROUND FIXTURES



MODEL BASED WORLD CUP PREDICTIONS

Fundamentals, Technicals, and Valuations for the Cup

Finally we take a look at some of the soccer data and see if we can run this through a quick modeling process and come up with a prediction for the World Cup winner. When navigating financial markets LPL Research uses Fundamental, Technicals, and Valuations analyses to effectively model for investment decisions so we tried to apply the same framework to the World Cup data.

As a proxy for the fundamentals we have decided to use the rankings of the team. We wanted to give a nod to history rather than purely going on the current world ranking (which many soccer fans deride due to teams like Belgium, who have never won a major trophy, being so high) so have created a blended rank. The blended rank includes the current rank and the all-time World Cup ranking. Brazil topped out this statistic, with Argentina and Belgium rounding out the top three. Hosts Qatar are the rank outsiders at their first World Cup.

Technical analysis is all about momentum so we used recent form/results as a proxy for this. We looked at all the teams' competitive fixtures over the past year (friendly matches tend to have more random results as coaches experiment with lineups, formations etc.). We ranked teams by the average number of points that were won over the course of those games, with three points for a win, one for a draw/tie, and none for a loss. Japan is the form team coming into the tournament with 5 wins and a draw/tie equating to 2.67 points per game played. Netherlands, Argentina, and Brazil are the only other teams that have not lost in the past year. Bang out of form Australia has only won 1 game in the past year and has an average of just one point per game.

We had to cheat a little bit on valuations. Normally we would be looking for over or undervalued investments but here are taking the value of the squads as fair values (even though we do tend to believe some squads, like England, are overvalued). The assumption here is that higher valued players should outperform lower valued players on average. England has the highest valued squad, with Brazil and France also topping the \$1 Billion mark.

Team		Fundamentals: Blended Ranking	Technicals: Form (Points per Game)	Valuations: Squad Value (U.S \$ Millions)	Overall Model Rank
Brazil		1	2.3	\$ 1,134	1
Argentina		3	2.4	\$ 633	2
Spain		7	2.1	\$ 902	3
Netherlands		8	2.5	\$ 587	4
France		4	1.4	\$ 1,110	5
England		5	1.1	\$ 1,260	6
Portugal		11	1.7	\$ 937	7
Germany		9	1.6	\$ 886	8
Belgium		4	1.8	\$ 563	9
Croatia		15	2.4	\$ 378	10
Uruguay		13	2.0	\$ 451	11
Serbia		19	2.3	\$ 357	12
Denmark		13	1.9	\$ 384	13
Japan		26	2.7	\$ 153	14
Morocco		27	2.4	\$ 252	15
South Korea		28	2.5	\$ 162	16
Senegal		24	2.2	\$ 288	17
Mexico		13	1.8	\$ 176	18
Iran		27	2.5	\$ 14	19
United States		19	1.8	\$ 273	20
Switzerland		16	1.6	\$ 281	21
Costa Rica		31	2.3	\$ 18	22
Poland		23	1.4	\$ 256	23
Cameroon		41	2.3	\$ 156	24
Tunisia		34	1.7	\$ 56	25
Canada		49	2.1	\$ 62	26
Wales		28	1.1	\$ 161	27
Ecuador		43	1.5	\$ 133	28
Qatar		58	2.2	\$ 15	29
Saudi Arabia		49	1.3	\$ 28	30
Australia		41	1.0	\$ 39	31
Ghana		55	1.2	\$ 204	32

Source: LPL Research, FIFA.com, TransferMKT.com, Kaggle.com 11/15/2022

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The 64,000 Simulated Game Question - Who Will Lift the Trophy?

We then took the overall model score for each team and used it as an input into a Monte Carlo simulation that we applied to each game of the World Cup, overlaying this with the impact of the scoring record over the past year for each team and how these interacted in each specific matchup. We factored the scoring records up or down depending on the strength of the opponent (so a 9-0 win by Germany versus Liechtenstein in World Cup Qualifying, for example, wouldn't get outsized importance). We then ran 1,000 simulated matches for each of the 64 World Cup matches, the average results of which are shown below. In the Group phase the only real upset was probably Japan qualifying ahead of Germany in Group E, while USA just scraped through ahead of Iran. One of the wackiest of the individual simulated group games saw the United States beating England 7-2, even though the average result over the thousand simulations was a 2-1 victory to England (with England seeing a 43% chance of winning).

Simulated Group Phase Standings:

Group A	Played	Win	Draw/Tie	Loss	GF - GA	Points
Netherlands 	3	2	1	0	7 - 3	7
Senegal 	3	1	2	0	4 - 3	5
Qatar 	3	1	1	1	4 - 5	4
Ecuador 	3	0	0	3	3 - 7	0

Group B	PL	W	Draw/Tie	L	GF - GA	Points
England 	3	2	1	0	7 - 4	7
United States 	3	1	2	0	5 - 4	5
Iran 	3	1	1	1	4 - 4	4
Wales 	3	0	0	3	3 - 7	0

Group C	PL	W	Draw/Tie	L	GF - GA	Points
Argentina 	3	2	1	0	6 - 2	7
Mexico 	3	2	1	0	5 - 3	7
Poland 	3	1	0	2	4 - 6	3
Saudi Arabia 	3	0	0	3	2 - 6	0

Group D	PL	W	Draw/Tie	L	GF - GA	Points
France 	3	3	0	0	6 - 3	9
Denmark 	3	2	0	1	5 - 4	6
Tunisia 	3	1	0	2	4 - 5	3
Australia 	3	0	0	3	3 - 6	0

Group E	Played	Win	Draw/Tie	Loss	GF - GA	Points
Spain 	3	1	2	0	4 - 3	5
Japan 	3	1	2	0	4 - 3	5
Germany 	3	1	0	2	4 - 5	3
Costa Rica 	3	0	2	1	3 - 4	2

Group F	Played	Win	Draw/Tie	Loss	GF - GA	Points
Belgium 	3	1	2	0	6 - 5	5
Croatia 	3	1	2	0	6 - 5	5
Morocco 	3	0	3	0	5 - 5	3
Canada 	3	0	1	2	3 - 5	1

Group G	Played	Win	Draw/Tie	Loss	GF - GA	Points
Brazil 	3	3	0	0	7 - 3	9
Serbia 	3	2	0	1	5 - 4	6
Cameroon 	3	1	0	2	4 - 5	3
Switzerland 	3	0	0	3	3 - 7	0

Group H	Played	Win	Draw/Tie	Loss	GF - GA	Points
Portugal 	3	2	1	0	6 - 3	7
South Korea 	3	1	2	0	4 - 2	5
Uruguay 	3	1	1	1	4 - 4	4
Ghana 	3	0	0	3	2 - 7	0

Source: LPL Research, FIFA.com, TransferMKT.com, Kaggle.com 11/15/2022

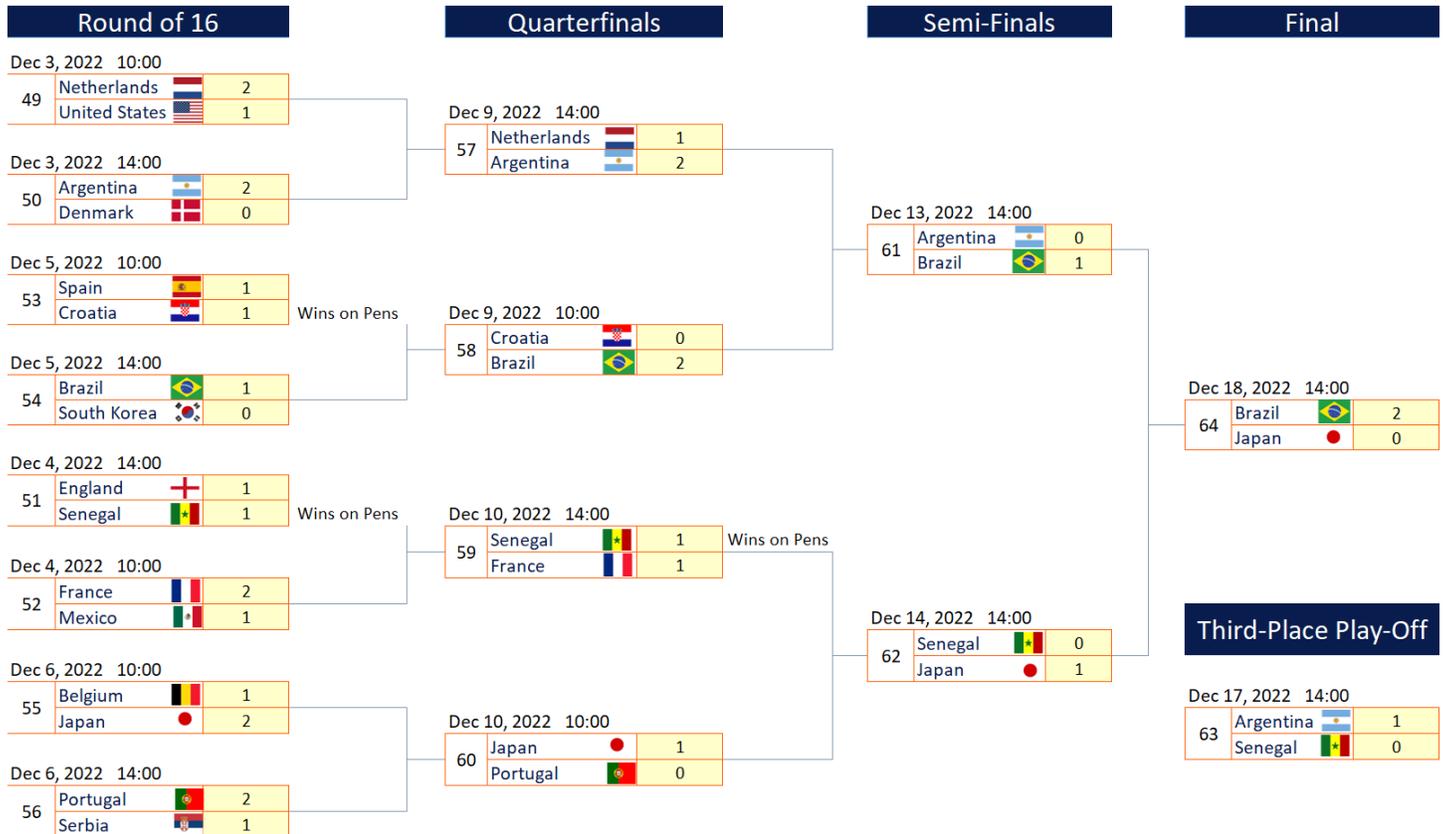
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Brazil Win the Cup, Japan Outperforms? England Lose on Penalties (Again!)

While our group stage does have many upsets the same cannot be said for the knockouts. Senegal beats both England and France on penalties (we looked at historic penalty shootout records to run these simulations so England stood no chance!) to become the first African team in history into the semifinals, and Japan takes advantage of a weaker bottom half of the draw to storm all the way into the final (becoming the first Asian side to do so). In the stronger top half Brazil wins a semifinal “Superclássico das Américas” versus Argentina before eventually being too much for Japan and taking Jules Rimet Trophy for the sixth time. Messi signs off with a third place finish as Argentina beat Senegal in the much hated third-place play-off.

Simulated Knockout Phase Results:



Source: LPL Research, FIFA.com, TransferMKT.com, Kaggle.com 11/15/2022

Past performance is no guarantee of future results.

Do not invest based on the winner of the World Cup.

This very surprising Japan run does show some of the follies of modeling extremely uncertain events like sports, and highlights the axiom “garbage in, garbage out.” Our model was rather sensitive too to Japan’s excellent form and that they had only conceded one goal (in six games) in the past year, without recognizing that the teams that Japan plays against in the Asian World Cup qualifiers are not of the same standard as the opposition that the European and South American teams play. Further iterations of the model would discount clean sheets/shutouts versus low ranked nations, weight recent form based on quality of the opposition, and run more simulations per match. Lucky that we have four years to work on improving this before the next World Cup in the United States, Mexico, and Canada in 2026! See you there!

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Goldman Sachs' "The World Cup and Economics 2018" 11 Jun 2018 by Sven Jari Stehn served as a huge inspiration for this report.

The phrase "World Cup-onomics" was first used in a beeknees.wordpress.com post in 2010.

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