



Introduction to Footballmetrics

Who will win the 2006 world cup?





Data: FIFA world cups



- Samples are goals scored by the country
- Variables are goals against the country

	England	France	Germany	Ireland	Italy	Japan	Mexico	Nigeria	Paraguay	Poland	Portugal	Rus
	11	12	13	14	15	16	17	18	19	20	21	22
ARG	1	0.0000	m	m	m	m	m	1.0000	m	m	m	m
BEL	2	m	m	m	m	m	2.0000	m	m	m	m	m
BRA	3	2.0000	m	2.0000	m	m	m	m	m	m	m	3.0000
CAM	4	m	m	0.0000	0.0000	m	m	m	m	m	m	m
CHI	5	m	m	m	m	m	m	m	m	m	m	m
COS	6	m	m	m	m	m	m	m	m	m	m	m
CRO	7	m	m	m	m	2.0000	m	0.0000	m	m	m	m
DEN	8	0.0000	2.0000	m	m	m	m	m	m	m	m	m
ECU	9	m	m	m	m	0.0000	m	1.0000	m	m	m	m
ENG	10	m	m	m	m	m	m	0.0000	m	m	3.0000	m
FRA	11	m	m	m	m	m	m	m	m	m	m	m
GER	12	m	m	m	1.0000	m	m	m	1.0000	m	m	m
IRE	13	m	m	1.0000	m	m	m	m	m	m	m	m
ITA	14	m	m	m	m	m	m	1.0000	m	m	m	m
JAP	15	m	m	m	m	m	m	m	m	m	m	1.0000
MEX	16	m	m	m	m	1.0000	m	m	m	m	m	m
NIG	17	0.0000	m	m	m	m	m	m	m	m	m	m
PAR	18	m	m	0.0000	m	m	m	m	m	m	m	m
POL	19	m	m	m	m	m	m	m	m	m	0.0000	m
POR	20	2.0000	m	m	m	m	m	m	m	4.0000	m	m

Problem: Data table suffers from severe sparsity





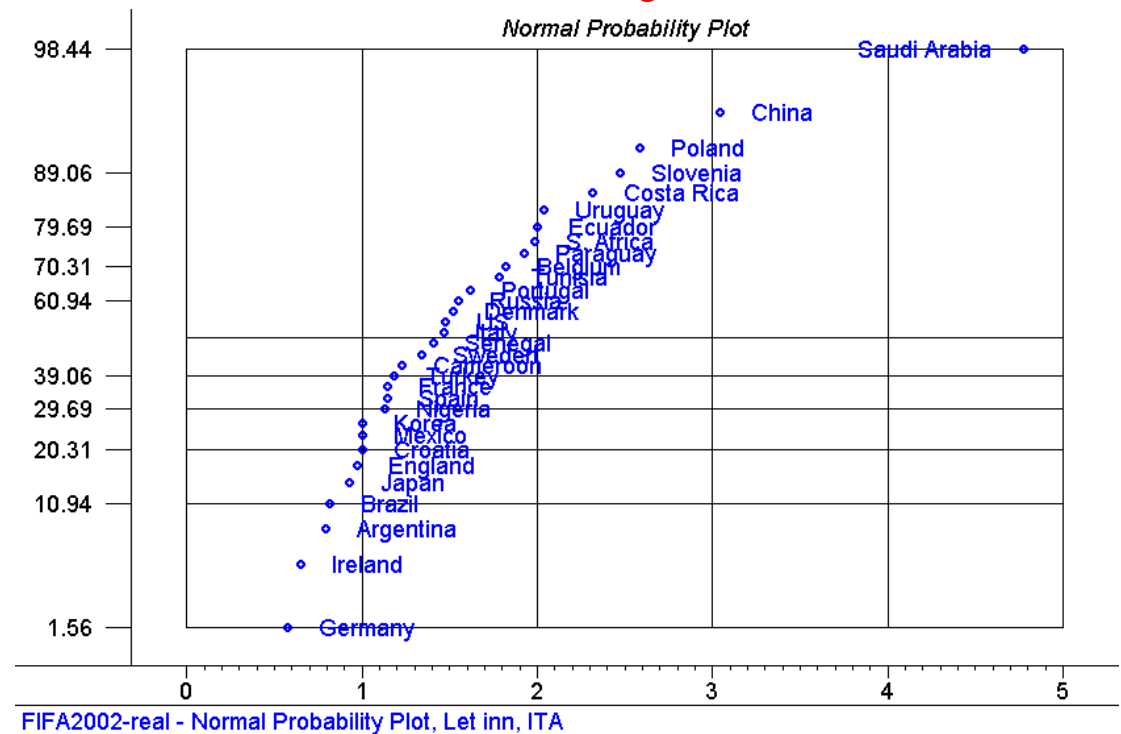
Goal score statistics



Sample statistics are now estimates of goals scored

Italy would then score 4.7 and 0.6 goals against Saudi Arabia and Germany, respectively

Italy



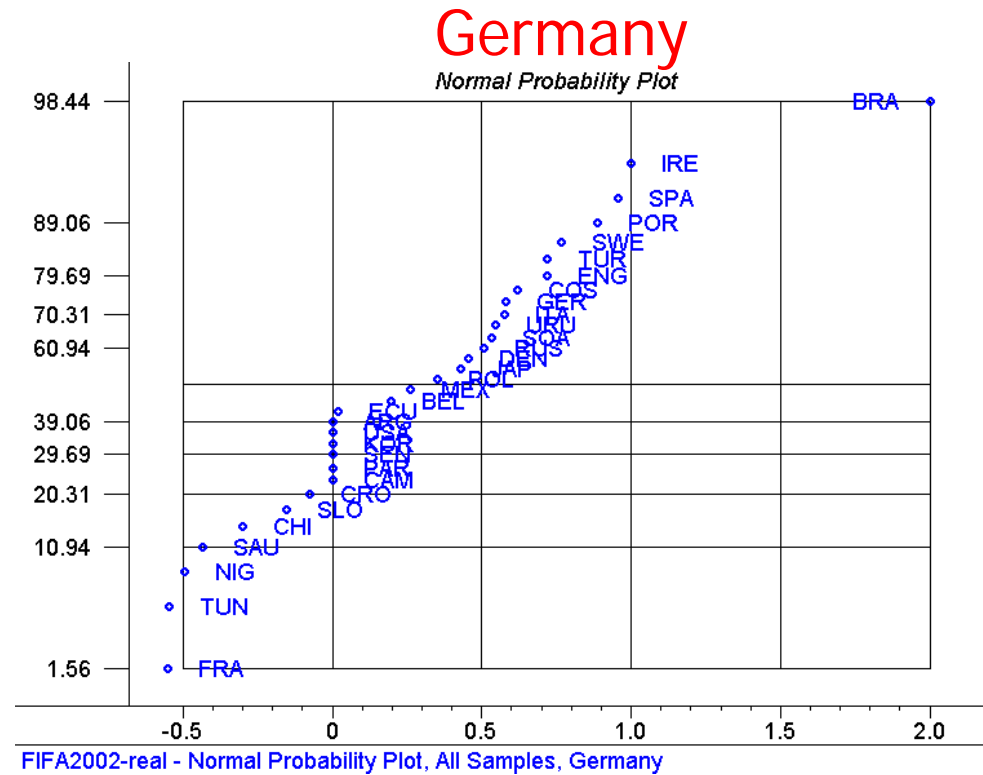


Goal score statistics



Variable statistics are now estimates of goals against

Germany would then let in 2 and -0.6(!) goals against Brazil and France, respectively

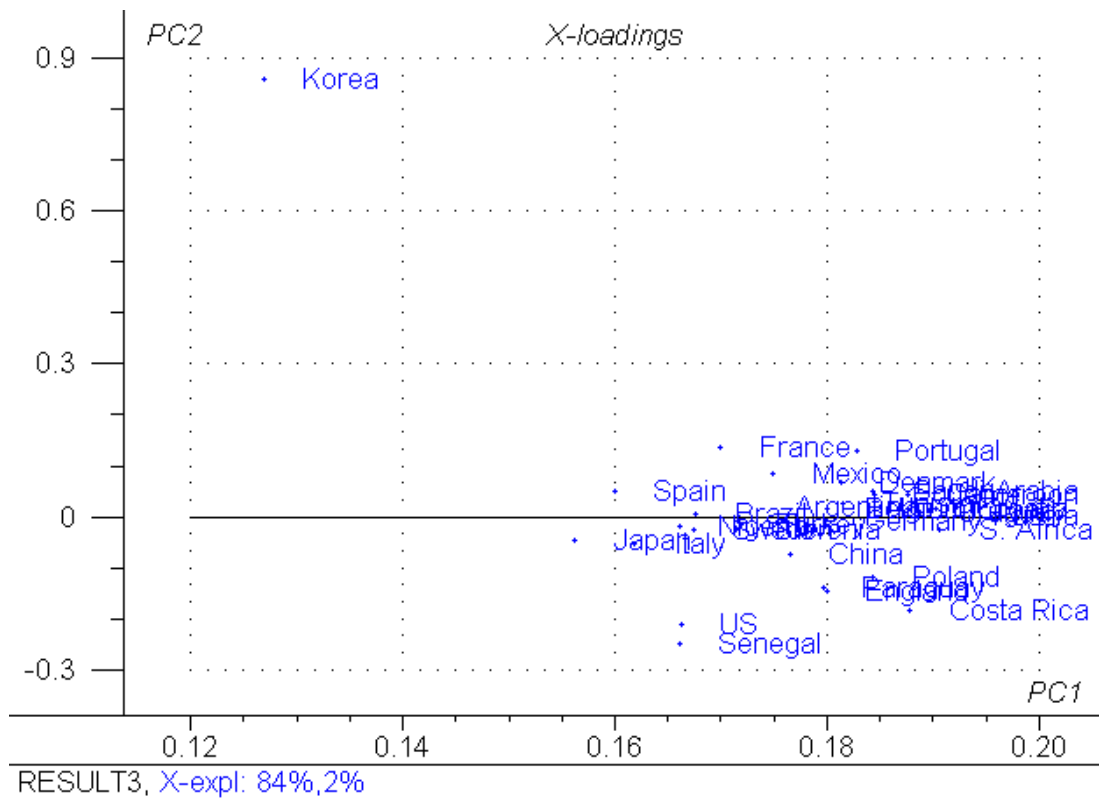




PCA



Loading plot shows positive scoring pattern
Korea stands out, as the 2002 surprise semi finalists.

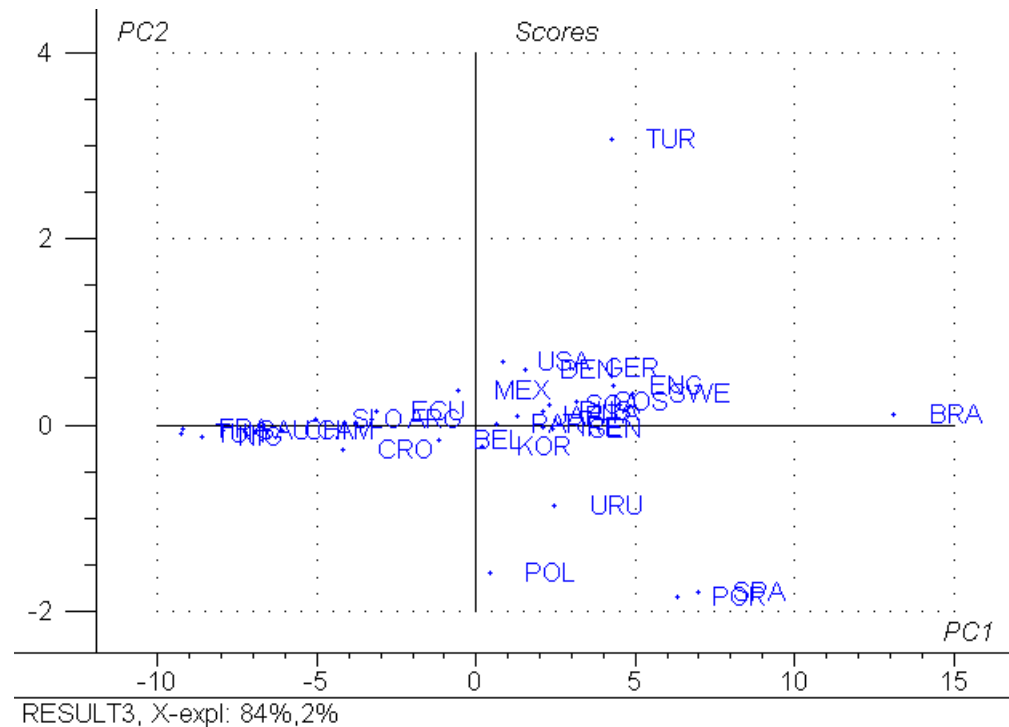




PCA



Score plot shows negative scoring pattern
 Turkey stands out, as another 2002 surprise team.





Second round (1/8-Finals)



Germany	2	1	Sweden
Argentina	1	1	Mexico
England	3	0	Ecuador
Portugal	2	1	Netherlands
Italy	3	1	Australia
Switzerland	3	2	Ukraine
Brazil	3	1	Ghana
Spain	2	1	France





Quarter Finals



Germany	1	0	Argentina
Italy	1	0	Switzerland
England	3	2	Portugal
Brazil	2	1	Spain



Portugal penalized for having half the team with Brazilian passports.

Michael Ballack scores for Germany with "the hand of God"





Semi Finals



Germany	2	1	Italy
England	1	0	Brazil



De Rossi sent off for a second elbow offence



Own goal by Ronaldinho in the 92. minute





Final



Germany 1 1 England

David Beckham misses in the penalty shoot out.





Conclusion



We have confirmed the 1986 hypothesis of Gary Lineker:

*22 men play for 90 minutes...
... and in the end Germany wins*

