

The Soccer Globalization Game

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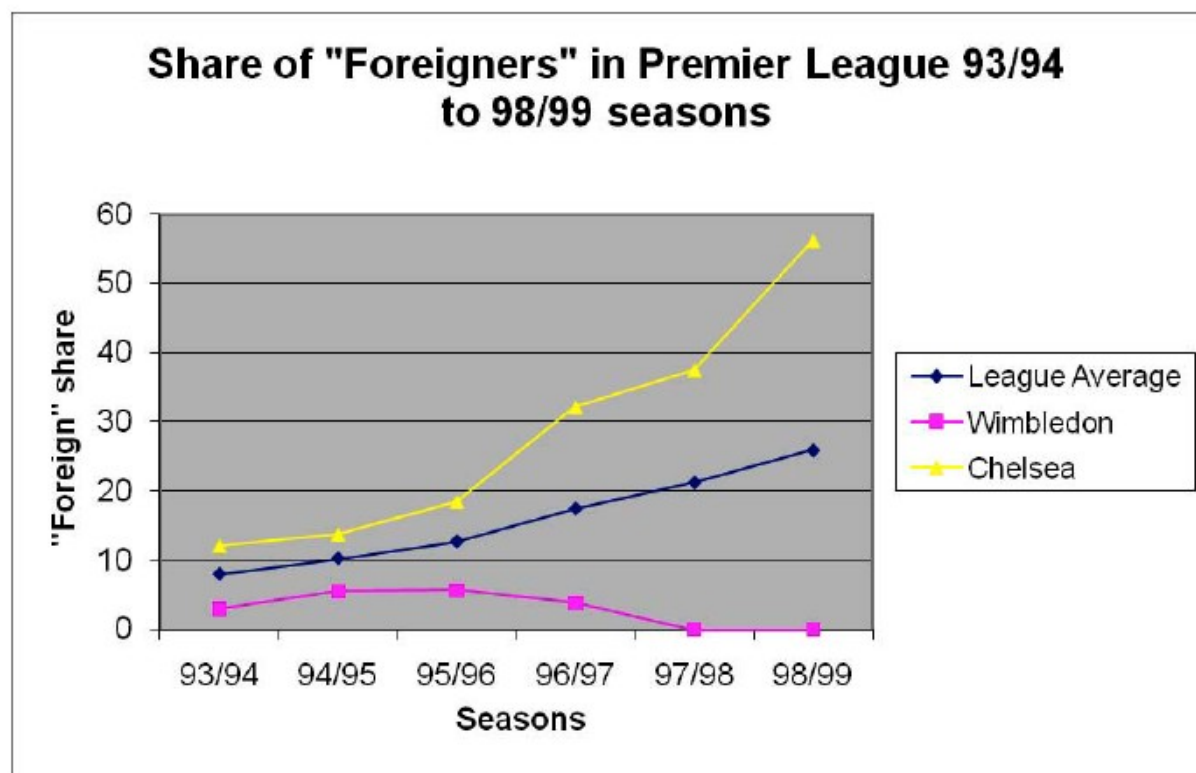
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Abstract

INTRODUCTION

Anybody, recently watching soccer games, has observed the globalization of modern soccer. This development has led to several teams playing top international games almost without players with citizenship from the country of their team. For instance, Arsenal FC, the UK Premier League club, has had several line-ups in Champions League this season without any UK players.



The above figure, showing a snapshot between the 93/94 season and the 98/99 season, indicates a significant increasing average share of foreign players in UK Premier League. At the same time, individual club variation is also evident. (See for instance¹ or² for more thorough empirical evidence.)

¹ H. A. Solberg and K. K. Haugen. "The invasion of foreign players into European club football – does it influence the quality of national teams." In journal revision 2008

The reasons while some soccer clubs - at an increasing rate- have chosen to substitute local with foreign players may be diverse. Obviously, lack of local talent - but perhaps also “gold-digging” strategies (trying to buy foreign players cheap and sell expensive at a later time stage), or even choosing to buy foreign players not necessarily to increase playing strength but also in order to increase value generating potential in the homeland of the acquired players. Buying the pretty faced player in order to maximize shirt-sales revenue- ignorant of player strength - is perhaps exaggerated, but indicates a gross variety of possible motives underlying modern soccer clubs choice of talent.

This work focuses on explaining some of the basic driving forces in soccer clubs choice between local and foreign talent through simple game theoretic analysis. We focus solely on the demand side even though the supply side surely also might be important.

MODEL SETUP AND ANALYSIS

		T₂	
		F ₂	L ₂
T₁	F ₁	$\frac{1}{2}P - \mu_2$	0
	L ₁	0	$\frac{1}{2}P$

The above figure shows a simple two-player simultaneous complete information game, representing the competitive situation between two clubs facing an important upcoming match³. This match may be interpreted as economically decisive. A Champions League qualifying match is perhaps a relevant example. The two teams (named T_1 and T_2 in the figure above) choose among two possible strategies- buying a foreign player (F_1, F_2) or a local player (L_1, L_2). Both teams must buy, so a buying decision is assumed to be made before the game. The teams playing strength is assume equal, and both the foreign and the local players are assumed to have equal performance capabilities – that is

² R. Poll and L. Ravanel. “Annual Review of the European football player’s labor market.” Technical Report ISBN 2-940241-16-3, CIES, Neuchatel 2006.

³ Or alternatively being within a transfer window facing a set up upcoming matches

$L_1=L_2$ and $F_1=F_2$. P is assumed to be the financial outcome of the game (i.e. the value of qualifying for Champions League), while μ_1 and μ_2 denote possible additional costs of employing foreigners as opposed to locals for Team 1 and 2 respectively. In addition, this formulation also incorporates the “perfect stranger”, that is if Team 1 buys a foreigner while Team 2 does not, then Team 1 wins with certainty and vice versa. Given these assumptions, it is straightforward to explain the Pay-offs in the game matrix. If both teams choose to buy foreigners or locals, they are equally good both before and after the trades, so expected Pay-offs for Team i are $\frac{1}{2}P - \mu_i$ given the strategy combination, (F_1, F_2) , and $\frac{1}{2}P$, given (L_1, L_2) . If any team deviates while the other does not, the team buying the foreigner wins with certainty and captures P alone. Assuming (logically) $P \gg \mu_i \forall i$, the unique pure Nash equilibrium (F_1, F_2) , indicated by circles and squares in the figure is easily obtained.

Though simple, the model discussed above does provide some interesting conclusions. Firstly, the Nash equilibrium indicates strong forces driving clubs to choose foreigners. This is perhaps not very surprising due to the “perfect stranger” assumption. However, a relaxation of this assumption, allowing the foreigner only to be marginally better than the local yields still relatively strong model-wise evidence for this type of equilibrium⁴. More interesting is perhaps the evident Prisoner’s Dilemma structure of the (F_1, F_2) equilibrium. If the clubs could negotiate through some kind of binding agreement on the choice (L_1, L_2) , both would benefit. To a certain degree this type of result resembles the results of Haugen⁵ and Eber⁶, and the regulative problems discussed there may also be important in this situation.

CONCLUSIONS

Though simple, this model may be seen as a first attempt to analyze formally a development which has gotten much attention in public soccer debate. The model opens up for further analysis including crowding costs (progressively increasing costs with the number of foreigners), different cost consequences between clubs and leagues as well as diverging market potential between teams. These effects and more can be analyzed with relatively simple parametric changes in the model frame discussed above.

⁴ Such results are obtained by introduction of a winning probability $\neq \frac{1}{2}$. Algebra and further math is omitted.

⁵ K. K. Haugen. “The performance-enhancing drug game”. Journal of Sports Economics, 4:67-86, 2004.

⁶ N. Eber. “The performance-enhancing drug game reconsidered: A fair play approach.” Journal of Sports Economics, Online First, December 2007

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