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The Benefits of Financial Markets: A Case Study of European Football Clubs

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Abstract

This study analyses the performance of European football clubs which undergo an initial public offering (IPO). We use a unique time-series and cross-section dataset consisting of domestic and international performance data to develop an event study to investigate the effects of a football club's on-field performance before and after the IPO.

The study follows from the observation that, as financial markets are expected to exhibit a positive influence on the economy as a whole, football clubs who access these markets should benefit as well. However, the conclusions of our study are similar to those in the corporate finance literature, where firms who undertake an IPO find their stock price underperforming similar firms in the medium term. Using our metric, football clubs have a diminished domestic and international performance after the stock market listing.

JEL classification: G14, G32, L83
Keywords: football, public markets, IPO

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Introduction

Financial markets benefit the economy in many ways. Their ability to facilitate investing and borrowing of funds allows individuals and firms to time consumption, and smooth the decision-making process over the medium term. Markets also facilitate the transfer of risk to parties which are best able to provide a return commensurate with the risk profile of a given investment. Markets enable the separation of ownership and management of the corporation, allowing an optimal allocation of scarce resources. The notion that the interaction between buyers and sellers each acting in self-interest will result in the most efficient allocation of resources has been enunciated for many years, since first being introduced as Adam Smith's "invisible hand" in 1776.

The sluggish rates of economic growth achieved in the command economies of Eastern Europe prior to 1990, and the subsequent pattern of growth, provides further evidence of the positive impact the existence of open and accessible (financial) markets can have on the economy.[3]

At firm level, financial markets facilitate the flow of capital to firms at the lowest possible cost, enabling investment in productive projects and subsequent growth in the economy. Firms who engage with financial markets should benefit from the advantages financial markets bring.

One specific way in which firms can make use of financial markets is to list the firm on a public exchange, allowing many types of investors the opportunity to purchase a share of the ownership of the firm, and permitting the firm to source capital at the lowest available cost for investment in productive projects. Firms undertake this change in ownership from a private, entrepreneur-driven entity to a public firm via an Initial Public Offering (IPO).

This route from private to public ownership is a common and standard path for firms as they grow in size, and the availability of capital from private sources becomes limited. In the case of football clubs, this process is much less common. The first football club to undertake an IPO was Tottenham Hotspur in 1983. In recent times, other football clubs have made the decision to undertake an IPO and list on a stock market. This paper is the first study of IPOs by football clubs, and examines whether football clubs benefit from a public listing.

[3] For example, see Pagano (1993) and Rajan and Zingales (1996). Rajan and Zingales ask whether industrial sectors that are relatively more in need of external finance develop disproportionately faster in countries with more developed financial markets.

For most firms, there a several performance measures one can use such as earnings per share, annual earnings growth or growth in fixed investment. But the key measure is the value of the firm, that is, how did the share price move in the time following the listing.

This paper develops measures of performance for football clubs, and uses a newly compiled and unique dataset consisting of football clubs' domestic and international results. We use these "on-pitch" performance measures as our measure for performance. Additionally, we analyze whether the stock price of a listed football club reflects the past, current and future performance of the club and thereby enhances the efficient allocation of resources.

We contribute to the literature by providing evidence of the benefits of a stock market listing of football clubs. Moreover, we extend the use of "operating" measures of firm performance to public football clubs to determine if success (performance) improved with an IPO.

The empirical results show that football clubs do not benefit from a stock market listing in general. Many clubs perform worse after the IPO than before. Only lower division clubs and hence smaller football clubs clearly benefit from a listing.

Literature Review

The corporate finance literature is in general agreement that new IPO share prices tend to underperform the market in the medium term.

Ritter and Welch (2002) studied US IPO data from 1980 to 2001, and found that, in the 3 years after listing, the average IPO underperformed the index by 23.4% and underperformed seasoned companies with same market capitalisation and book-to-market ratio by 5.1%. Ritter (1991) examined 1526 IPOs from 1975-84 in the US and finds underperformance after 3 years of 16.9%. Loughran and Ritter (1995) looked at 4753 IPOs in the US from 1970-1990 and found IPOs gave an average return of 8.4% in the 3 years after listing and 15.7% in the 5 years after, versus equivalent figures of 35.3% and 66.4% respectively for matching firms. Internationally, the same long-run underperformance has been found by Alvarez & Gonzalez (2005) for Spain, Levis (1993) for the UK, Ljungqvist (1997) for Germany and Lee et al (1996) for Australia.

However, this underperformance of newly listed firms has been argued to be related to other factors. Eckbo and Norli (2005) argue that the observed low returns on IPOs are a factor of the risk involved and that newly listed firms only underperform the index because IPO firms are typically small growth firms, which have exhibited low returns post 1963 as per Fama and French (1992). Brav et al (2000) also found that low abnormal returns are reflective of risk and that IPO firms' returns were not lower when the sample was controlled for company size and book-to-market ratio. Schultz (2003) finds the underperformance of IPOs is actually a factor of pseudo market timing, as owners will be more likely to take a firm public when stock markets are higher, and hence IPOs are clustered around periods of low returns on stock markets. Purnanandam and Swaminathan (2004) found that the long-run underperformance of IPOs was due to the offer price being too high relative to similar firms, as judged by price multiples such as price-to-EBITDA, price-to-sales and price-to-earnings.

In addition to underperformance in the stock price of firms which went public, several studies have found firms which list tend to underperform when operating measures of performance are considered.

Jain and Kini (1994) studied 682 IPOs from 1976 to 1988 and found IPO firms exhibited a decline in post-issue operating performance, measured by both return on assets and cash flow deflated by assets, both before and after industry adjustment. However, they did find firms exhibit a higher growth in sales and capital expenditure in the post IPO period. Clementi (2002) develops a model for return on assets based on the Jain and Kini paper, which predicts operating performance will peak in advance of an IPO, and decline for several years thereafter, which is consistent with industrial organisation theory which says a firms performance declines with age and size (see, for example, Evans, 1987). Mikkelson et al (1997) find operating return on assets declines in the year following IPO, but then exhibits no further declines in a 10-year period.

Football clubs have historically tended to have been owned privately by local businesspersons and had poor records of profit-making (Russell 1997). Company structure did not evolve as commercial enterprises, and, for example, dividend payments to directors were banned in England until the 1980s. Morrow (1999) examined English football clubs and characterised their corporate structure as small, privately-owned and under-capitalised with low financing achieved from retained earnings.

Dobson and Goddard (2006) provide a brief historical overview on football clubs that went public. The first football club to go public was Tottenham Hotspur in October 1983. The club

raised £3.3m in the IPO, a sum equivalent to around £100m today if inflated by football transfer fees.[4] Other notable early IPOs were by Millwall in 1989 and Manchester United in 1991.

We are unaware of other studies that analyze IPOs and their effects for football clubs.

I. Empirical Analysis

Our sample consists of the 27 publicly listed European football clubs quoted on the Dow Jones STOXX football index. For some of these clubs we have no performance data for the period before the listing, leaving us with a sample consisting of 22 clubs from 10 countries. The earliest listing in our sample is Southampton, on 1st April 1994, and the latest is Benfica, on 1st May 2007. The domestic and international performance measures (points per game and UEFA club coefficient) are collected for the period starting in 1990 until 2008 providing a panel-data set of 22 observations in the cross-section (clubs) and 19 observations through time.

Due to the small number of clubs in our sample, we concentrate our analysis on operating measures of performance as opposed to company value, in a similar fashion to the study by Jain and Kini (1994). The performance measures we develop are points per game, for domestic competition, and the UEFA performance coefficient, for international competition. Our domestic performance measure, points achieved per game, has a standardised 3 points per win and 1 point per draw. This controls for the different number of games across countries, divisions and seasons. The UEFA Performance co-efficient grades clubs for their performance in pan-European competitions. This is also standardised as a proportion of the average rating, to account for changes in calculation methods across seasons. Domestic results data was obtained from Rec.Sports.Soccer Statistics Foundation and UEFA data was obtained from the official uefa website.[5]

Figure 1 shows the average domestic performance of all football clubs for the sample period and the fraction of football clubs listed. The figure illustrates that the average performance did not increase in that period.

< Insert figure 1 here >

[4] The record transfer fee paid by an English club was £1.0m in 1983, it is £32.6m as of January 2009
[5] www.uefa.com

Figure 2 illustrates the relationship of the average international performance of all football clubs and the fraction of listed clubs in the sample period. The figure shows that there is no significant increase of the performance of football clubs. The break in the international performance series is due to a structural change of the UEFA coefficient in 1999.

< Insert figure 2 here >

Finally, figure 3 shows the evolution of the STOXX football index and the fraction of listed football clubs in relation to the total number of clubs for each year. The graph indicates that IPOs are weakly clustered and occur at times when stock prices are relatively high.

< Insert figure 3 here >

A. Econometric Framework

This section first describes the theoretical framework and then specifies the regression models accordingly.

The main hypothesis is that football clubs benefit from financial markets through a listing. While this hypothesis is too general to test, we formulate three more specific hypotheses derived from the main hypothesis.

The first hypothesis focuses on the domestic performance of a football club before and after the listing and the second hypothesis analyses the international performance of a football club. The third hypothesis focuses on the post-listing period and aims to assess whether the share price of a football club fully reflects and anticipates the current, past and future success of the football club, respectively.

Hypothesis 1 (domestic):

Football clubs perform better in the domestic league after the listing (IPO) than before the listing.

Hypothesis 2 (international):

Football clubs perform better in international competition after the listing (IPO) than before the listing.

Hypothesis 3:

The share prices of football clubs fully reflect (predict) the past and current (future) domestic and international performance of the club.

Given these hypotheses we specify the following (panel-data) regression models.

$$perf_{it} = a_i + b\ IPO_D_{it} + \boldsymbol{c}\ \boldsymbol{X}_{it} + e_{it} \quad (1)$$

where *perf* is the number of average points and the subscripts denote the club (*i*) and the year (*t*), *IPO_D* is a dummy variable that is one if the club is listed (after the IPO) and zero otherwise and ***X*** is a matrix of control variables that aims to isolate the effect under study. The error term is given by *e*. The variables a, b and c are parameters to estimate where a is a club-specific parameter (hence the subscript *i*) and the other parameters are jointly estimated for all clubs.

The dependent variable *perf* is a domestic performance measure (average points per game, for hypothesis 1) and an international performance measure (UEFA club coefficient, for hypothesis 2).

The control variables specified in ***X*** include club characteristics such as small and large clubs, small and large leagues in order to account for the level of competition and lagged values of the dependent variable (performance) in order to control for persistence in the success of a football club.

The regression model for a test of the hypothesis that the stock price adequately reflects past, current and future performance is specified as follows:

$$R_{it} = a_i + bRM_t + c\ perf_{it+t^*} + \boldsymbol{d}\ \boldsymbol{X}_{it} + e_{it} \quad (2)$$

where *R* is the return of a club's stock price for a given year. The subscripts *i* and *t* denote the club and the year, respectively. *RM* is the market return given by the equally-weighted average of all clubs for each year in order to control for common football-related stock price movements, *perf* is the domestic or international performance measure which is specified with a lag ($t^*<0$), as a contemporaneous effect ($t^*=0$) and with a lead ($t^*>0$). Finally, ***X*** is a matrix of additional control variables such as small and large club, small and large league or financial market etc.

If $t^*<0$, we test the hypothesis whether past performance affects the current stock price. If $t^*=0$, it is tested whether the current performance is associated with the current stock price and finally, if $t^*>0$ it is tested whether future performance is predicted by the current stock

price. The null hypothesis is that there is no effect which implies that H_0: $c=0$. If $c<0$, there is a negative relationship between the performance and the stock price and if $c>0$, there is a positive link between the two variables.

Given that our dependent variables are implicit measures of relative performance, that is, the measures themselves control for the presence of non-public football clubs, we have not included private football clubs as a control sample in our analysis. There is the additional difficulty of trying to get an appropriate control club for each public club in our sample.
For example, our sample contains 4 Turkish clubs; Besiktas, Fenerbahce, Galatasaray and Trabzonspor. In the 18 seasons from 1990-91 to 2007-08, these 4 clubs made up the top 4 on 9 occasions, and 3 of the top 4 on 8 other occasions. Finding adequate comparable clubs will be difficult in this case, and in many others.

B. Empirical Results

This section presents and illustrates the estimation results of the three models (hypotheses) specified above.
Table 1 shows the coefficient estimates, standard errors in parenthesis and t-statistics for the relationship of the domestic performance pre and post the IPO.

< Insert table 1 here >

Specification 1 provides information about the change of the domestic performance before and after the IPO. The coefficient estimate of the IPO dummy is 0.0324. This means that the average points are higher after the IPO than before. However, the number is neither significant in statistical terms nor in football terms, that is, the performance of a football club does not increase significantly. The constant is estimated with 1.778 points per game on average (not reported). Hence, clubs that listed increased their points per game from 1.778 to 1.810 points. In a season of 30 games this implies one additional draw per football club compared to a loss in previous seasons.
Specification 2 augments the basic model with an additional dummy for the football clubs that play in the first national league (e.g. Premier League in England, 1.Bundesliga in Germany and Serie A in Italy). The effect on top league teams is given by the sum of both coefficient estimates and indicates that top leagues' clubs do not perform better after an IPO than before.

The fact that the coefficient estimate for the IPO dummy is highly significant and estimated at 0.2260 implies that lower division teams clearly benefit from the IPO. Specification 3 confirms this finding. Specification 4 includes a large league IPO dummy in order to account for differences across leagues. The underlying hypothesis is that larger leagues (e.g. England, Spain, Italy, France and Germany) imply a higher degree of competition. The results show that there is a positive effect of the IPO in larger leagues. Combined with the results obtained in specification 1 through 3, this implies that smaller clubs (in lower divisions) of larger leagues benefit the most followed by top division clubs in larger leagues. Clubs in smaller leagues like Denmark, Portugal or Turkey do not benefit from a listing.

Finally, specification 5 and 6 show that there is persistence in the performance of a football club and that the coefficient estimates change quantitatively but not qualitatively with the inclusion of the lagged domestic performance.

An alternative regression model including not only the contemporaneous IPO dummy but also a lagged dummy and a lead dummy in order to assess the impact of an IPO through time shows that there is a negative effect of the lagged variable and a positive effect of the contemporaneous and the lead (forward-looking) IPO. The results are not reported explicitly due to the statistical insignificance of all three coefficient estimates.

Table 2 shows the coefficient estimates, standard errors in parenthesis and t-statistics for the relationship of the international performance pre and post the IPO. We use a football club's UEFA coefficient as a measure of the international performance or success. The UEFA coefficient is standardized to control for a change in the computation of the coefficient in the sample period. The UEFA changed the computation which led to higher values on average in the second half of the sample period.

< Insert table 2 here >

The table is structured in the same way as table 1. There are six different model specifications. Specification 1 shows the change in the international performance. The coefficient estimate indicates that there is no significant effect after the IPO. Specifications 2 and 3 control for top league teams and 2nd division teams and show that the effect is negative for 2nd division and 3rd division teams but positive for top league teams. However, while the coefficient estimates are large and thus significant in football terms they are statistically insignificant.

Specification 4 shows that football clubs playing in relatively large leagues benefit from a listing, Specifications 5 and 6 control for a potential persistence in the international

performance of a football club and show that the persistence is higher internationally than nationally. The results change quantitatively but the qualitative results remain unchanged.
Finally, we evaluated the effects of the IPO on the international performance with a lagged, contemporaneous and lead (forward-looking, t+1) IPO dummy. The results show a negative coefficient estimate for the lagged IPO dummy (-0.156) and positive coefficient estimates for the contemporaneous (0.138) and the lead (0.104) IPO dummies. However, all three coefficient estimates are statistically insignificant.

Table 3 shows the coefficient estimates, standard errors in parenthesis and t-statistics for the model which tests whether the stock market price (return) of a football club is influenced by the domestic and/ or international performance of a club contemporaneously and dynamically (lead and lag relationship). Since we use data with an annual frequency, 'contemporaneous' means a relationship for a given year.

< Insert table 3 here >

Specification 1 presents the coefficient estimate for the benchmark return RM which is the return of the STOXX football index. The coefficient is positive and highly significant. Specifications 2 and 3 augment this model with the contemporaneous domestic performance and the contemporaneous international performance, respectively. The results indicate that there is a positive and significant effect which implies that the stock price of a football club depends on the contemporaneous performance.
Specifications 4 and 5 assess the relationship dynamically by including the lagged, the contemporaneous and the future domestic performance (specification 4) and international performance (specification 5). There is a negative lagged domestic performance effect and a positive contemporaneous and future domestic performance effect. For the international performance only the contemporaneous effect is significant.
Specification 6 includes both the domestic and the international performance measures in one model and finds that the lagged domestic performance exhibits a negative and significant effect on the current stock return and that the contemporaneous international performance exhibits a positive and significant effect on the current stock price of the football club. All other variables (except the benchmark index) are statistically insignificant.

The results show that football clubs do generally not benefit from a stock market listing. An IPO (listing) only has a positive impact for the success in the home league for football clubs playing in smaller leagues or lower division football clubs that belong to large leagues. The

effect is reversed for the success in the international competition (UEFA Cup or UEFA Champions League). Here, only clubs playing in the top division slightly benefit from a stock market listing. However, the effect is statistically insignificant.

Finally, an analysis of the dependence of a football club's stock price on the domestic and international performance (success) shows, that the stock price is positively related to the contemporaneous international performance of the football club and negatively related to the past (lagged) domestic performance of the football club. The current stock price does not predict the future success of a football club.

IV. Conclusions

This paper analyzed the effect of an IPO on the success (performance) of football clubs. We find that the majority of football clubs do not perform better in the home league (championship) after the IPO than before. Only football clubs in lower divisions in large football leagues benefit from a listing in the home league. In addition, the majority of football clubs only perform slightly better in the international championship after the IPO than before and the effect is statistically insignificant. Finally, the stock price of a football club depends on the past (previous seasons) domestic results and the current (season's) international performance.

Berrett, Slack & Whitson (1993) suggest that market pricing is an inappropriate allocation mechanism for pricing sports clubs, as football clubs generate positive externalities. Given investors do not need to buy shares in a football club to achieve some return, the allocation role of financial markets may be compromised.
Indeed, given the evidence that football clubs generally do not benefit from a stock market listing and that the stock price does not fully reflect or predict future performance, we conclude that the benefits of a stock market listing are limited.

Future research could focus on the externalities generated by football clubs per se and externalities generated by a stock market listing. Moreover, the decision to go public could be related to the ownership structure of a football club and the number of fans.

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Table 1: Domestic performance pre and post IPO
This table shows the effect of a football club's stock market listing on its performance in the home league. The regression model is estimated with the fixed-effects estimator.

Model: $perf_{it} = a_i + b\ IPO_D_{it} + \boldsymbol{c}\ \boldsymbol{X}_{it} + e_{it}$

	Spec. 1	***Spec. 2***	***Spec. 3***	***Spec. 4***	***Spec. 5***	***Spec. 6***
IPO_D	.0324	.2260***	.2612	-.0686	.0415	.3661*
	(.0369)	.08298	(.1880)	(.0518)	(.0390)	(.1930)
	0.88	2.72	1.39	-1.32	1.06	1.90
ipo top league		-.2206***	-.2560			-.3573*
		.0849	(.1893)			(.1936)
		-2.60	-1.35			-1.85
ipo 2nd league			-.0364			-.0686
			(.1742)			(.1740)
			-0.21			-0.39
ipodum large market				.2007***		dropped#
				(.0730)		
				2.75		
perf (t-1)					.0872	.1012*
					.0571	(.0564)
					1.53	1.79

***, **, * denote statistical significance at the 1%, 5% and 10% level, respectively.

dropped due to multi-collinearity

Table 2: International performance pre and post IPO
This table shows the effect of a football club's stock market listing on its international performance. The performance is measured by the standardized uefa club coefficient. The model is estimated with the fixed-effects estimator.

Model: $perf_{it}\ (uefa) = a_i + b\ IPO_D_{it} + \boldsymbol{c}\ \boldsymbol{X}_{it} + e_{it}$

	Spec. 1	***Spec. 2***	***Spec. 3***	***Spec. 4***	***Spec. 5***	***Spec. 6***
IPO_D	.0474	-.1635	-.1416	-.0554	.0130	-.3018
	(.1021)	(.2318)	(.5253)	(.1449)	(.0972)	(.517)
	0.46	-0.71	-0.27	-0.38	0.13	-0.58
ipo top league		.2404	.2184			.2622
		(.2372)	(.5288)			(.5014)
		1.01	0.41			0.52
ipo 2nd league			-.0226			-.0201
			(.4865)			(.4580)
			-0.05			-0.04
ipodum large market				.2040		.1760
				(.2042)		(.2009)
				1.00		0.88
perf (t-1)					.2763***	.2734***
					(.0532)	(.0535)
					5.19	5.11

***, **, * denote statistical significance at the 1%, 5% and 10% level, respectively.

Table 3: Stock returns and performance
This table shows the effect of a change in a football club's domestic and international performance on the stock price. The model is estimated with the fixed-effects estimator.

$R_{it} = a_i + bRM_t + c\,\Delta perf_{it+t^*} + \boldsymbol{d}\,\boldsymbol{X}_{it} + e_{it}$

	Spec. 1	***Spec. 2***	***Spec. 3***	***Spec. 4***	***Spec. 5***	***Spec. 6***
RM	.3896*** (.0494) 7.89	.3422*** (.0640) 5.35	.3684*** (.0492) 7.48	.3652*** (.0733) 4.98	.3547*** (.0517) 6.86	.3343*** (.0744) 4.49
domestic performance (change) perf (t-1)				-.1153 (.0801) -1.44		-.1962** (.0816) -2.40
perf (t)		.1326** (.0567) 2.34		.1179 (.0882) 1.34		.0423 (.0898) 0.47
perf (t+1)				.0736 (.0758) 0.97		.0446 (.0760) 0.59
international performance (change) perf (t-1)					.0036 (.0041) 0.88	.0038 (.0048) 0.78
perf (t)			.01004** (.0032) 3.10		.0124** (.0040) 3.13	.0148** (.0047) 3.15
perf (t+1)					.0022 (.0037) 0.60	.0010 (.0044) 0.21

***, **, * denote statistical significance at the 1%, 5% and 10% level, respectively.

Table 4: List of football clubs and their IPO dates

Club	*Country*	*IPO Date*
AALBORG BOLDSPILKLUB	Denmark	14 September 1998
AFC AJAX	Netherlands	11 May 1998
AIK FOOTBALL	Sweden	1 July 2006
ARHUS ELITE	Denmark	1 December 2004
AS ROMA	Italy	22 May 2000
BESIKTAS	Turkey	19 February 2002
BIRMINGHAM CITY	England	1 April 1997
BORUSSIA DORTMUND	Germany	30 October 2000
CELTIC	Scotland	1 September 1995
FC COPENHAGEN	Denmark	1 December 1997
FENERBAHCE SPORTIF HIZMET	Turkey	17 September 2004
FUTEBOL CLUBE DO PORTO	Portugal	1 June 1998
GALATASARAY	Turkey	19 February 2002
JUVENTUS	Italy	19 December 2001
LAZIO	Italy	6 July 1998
OLYMPIQUE LYONNAIS	France	1 February 2007
PRESTON NORTH END	England	1 September 1995
SOUTHAMPTON	England	1 April 1994
SPORT LISBOA E BENFICA	Portugal	1 May 2007
SPORTING	Portugal	2 June 1998
TRABZONSPOR SPORTIF YATIR	Turkey	15 April 2005
WATFORD	England	1 August 2001

Figure 1: Average domestic performance and fraction of listed football clubs
This figure shows the evolution of the domestic performance per year (average points per game, dashed line) from 1990 (year 1) until 2008 (year 19) and the fraction of listed clubs in the sample for the same period. The graph illustrates that the average performance did not increase with the listing.

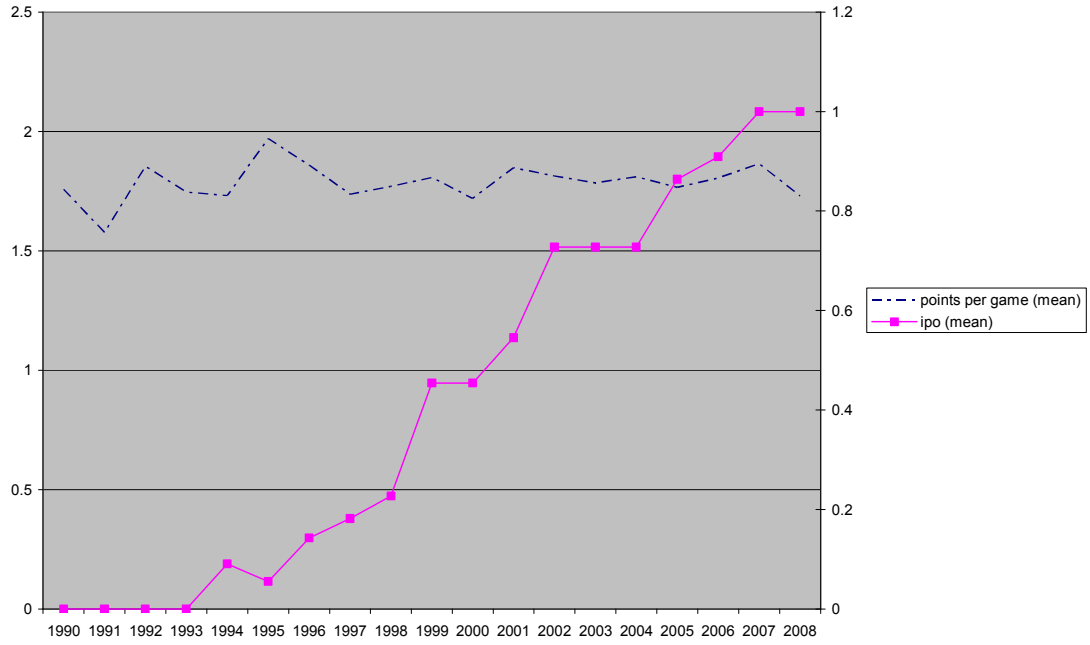


Figure 2: Average international performance and fraction of listed football clubs
This figure shows the evolution of the international performance per year (average UEFA coefficient, dashed line) from 1990 (year 1) until 2008 (year 19) and the fraction of listed clubs in the sample for the same period. The graph illustrates that the average performance did not increase with the listing.

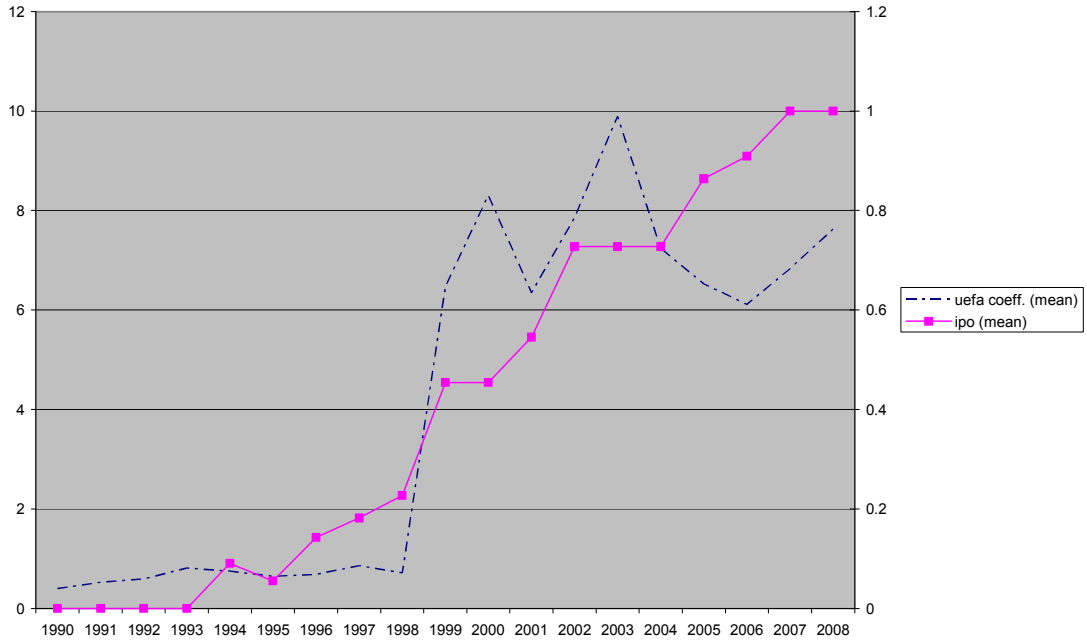
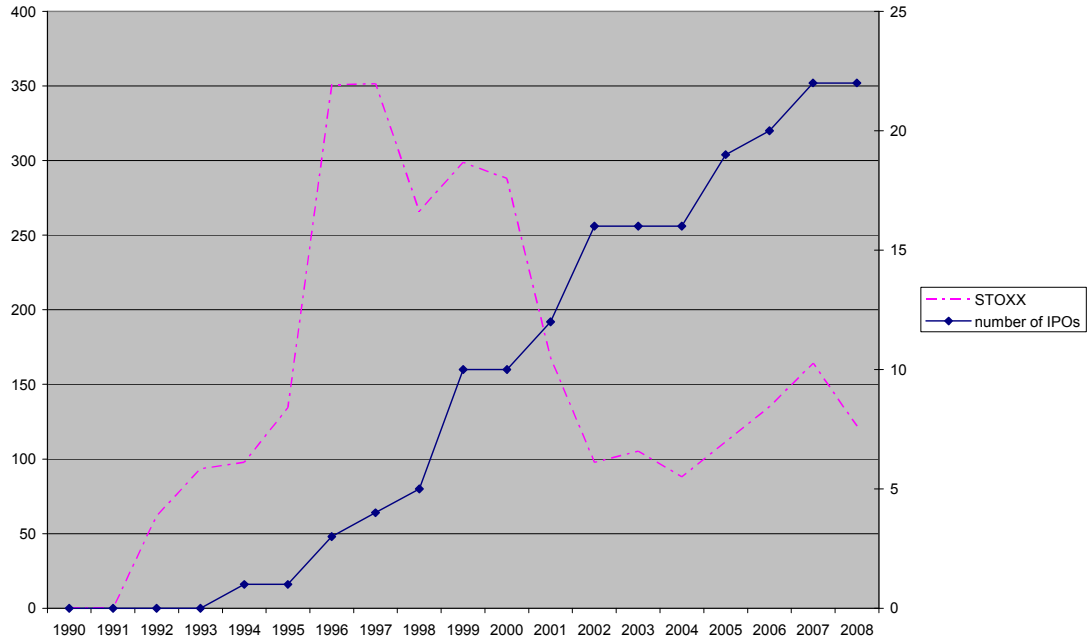


Figure 3: Football index (STOXX) and number of IPOs





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