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**On the asking price for selling Chelsea FC**

**Georgios Bertsatos and Gerassimos Sapountzoglou**

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# On the asking price for selling Chelsea FC

Georgios Bertatos<sup>a</sup>, Gerassimos Sapountzoglou<sup>b</sup>

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## Abstract

We estimate the asking price for putting Chelsea up for sale taking into account the fundamental value of the club's brand name and Roman Abramovich's declaration not to ask for any loans to be repaid.

*JEL classification:* Z20; Z23; Z28

*Keywords:* Sports Economics; Valuation

## Introduction

Roman Abramovich (henceforth RA) announced on 2 March 2022 his decision<sup>1</sup> to put Chelsea FC up for sale after his £140mn takeover of the club 19 years ago back in July 2003. His much-discussed statement to sell Chelsea is ready to rock the boat at the English Premier League and raises doubts over the club's future. RA is writing off £1.5bn debt he is owed by the Blues, and reportedly asking for at least £3bn to walk away from Stamford Bridge. Such a price tag – that is expected to be taken seriously by RA – seems a stretch according to analysts and media.<sup>2</sup> In this paper, we take up the task to investigate whether the £3bn asking price for selling Chelsea is justified from a fundamental perspective by estimating and utilizing the fundamental value of the club's brand name.

## A fundamental model for sports clubs valuation

We apply the fundamental model for sports clubs valuation proposed by Bertatos and Sapountzoglou (2021, hereafter BS).<sup>3</sup> BS establish a fundamental valuation model based on discounted revenues for the estimation of [1] the brand-name value (*BNV*) of a sports club, [2] the club's total value (*CTV*),

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<sup>a</sup> Athens University of Economics and Business, School of Economic Sciences, Department of Economics, 76 Patission Str., GR 10434, Athens, Greece, email: [bertatosg@aub.gr](mailto:bertatosg@aub.gr) (corresponding author)

<sup>b</sup> Athens University of Economics and Business, School of Economic Sciences, Department of Economics, 76 Patission Str., GR 10434, Athens, Greece, email: [gsap2@aub.gr](mailto:gsap2@aub.gr)

<sup>1</sup> Source: <https://www.chelseafc.com/en/news/2022/03/02/statement-from-roman-abramovich>

<sup>2</sup> Sources: <https://www.reuters.com/article/us-soccer-chelsea-russia-breakingviews-idDEKCN2L01KE>

<sup>3</sup> Bertatos, G. and Sapountzoglou, G., *A valuation model for sports clubs and stadiums: A discounted cash flow approach*, August 2021. DOI: <http://dx.doi.org/10.13140/RG.2.2.29747.14886>

and [3] owned stadium's value (*OSV*), whilst the empirical application enriches the suggested valuation model with Monte Carlo stochastic simulations focusing on the case of Panathinaikos FC.

According to BS model, a sports club should be viewed as a “quasi firm”, whose benevolent manager – having always in mind the club's best interest – bears a triple task consisted of balanced budgets, efficient allocation (wise spending) of financial resources, and revenues maximization. Under these objectives, maximum value is achieved and calculated as Equation (1) shows.

$$V(max)_0 = \lim_{T \rightarrow \infty} \sum_{t=1}^T \frac{R_t}{(1+r)^t} \quad \text{Equation (1)}$$

where,  $r$  is the appropriate discount rate and  $R_t$  is the revenues at time  $t$ . Also, if revenues are smaller than costs and the deficit is covered by share capital increases then, maximum value is still obtained. In such a case the revenues are augmented in the valuation procedure by the amount of covered losses.

BS show that the brand-name value of a sports club depicts the core value of the club and constitutes a subset of the club's total value, because only a part of total revenues is used for the valuation of the brand name. Particularly, all type of revenues (matchday, commercial, and broadcasting) are utilized for the club's total value, whilst for the valuation procedure of the brand name only fans-based, or matchday<sup>4</sup>, revenues are applied [see Equation (2)].

$$BNV_0 = \max \left\{ \lim_{T \rightarrow \infty} \sum_{t=1}^T \left[ a_0 \cdot R_0 \cdot \prod_{j=1}^t \frac{(1+g_j)^j}{(1+r_j)^j} \right] - X_0, 0 \right\} \quad \text{Equation (2)}$$

where,  $BNV_0$  is the current value of brand-name,  $R_0$  is current revenues,  $g_j$  is the one-period growth rate at period  $j$ ,  $r_j$  is the one-period discount rate at period  $j$ ,  $a_0$  is the ratio of the matchday revenues relative to total revenues, and  $X_0$  is a penalizing argument for negative values of book equity.

## Sample and results

During RA's almost two-decade reign, the Blues celebrated 21 trophies<sup>5</sup> (2 Champions Leagues, 5 Premier League titles, and many others) – 8 more major titles than those harvested before RA bought the club in July 2003 from Ken Bates for £140mn – and Chelsea's name has been cemented as one of the most prevalent clubs in the world. The club has run riot in UK as no other English club has won more titles than Chelsea since 2003.<sup>6</sup> Ten years later, the Blues become the fourth club – and the

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<sup>4</sup> Matchday revenues are money earned from ticket sales, food and hospitality related to the club. This is generally money earned from the fans of the club. Source: <https://footballfinanceblog.wordpress.com/commercial-vs-match-day-revenue>

<sup>5</sup> Source: <https://www.chelseafc.com/en/history/trophy-cabinet>

<sup>6</sup> Source: <https://www.sportskeeda.com/football/top-5-english-clubs-trophies-won-since-roman-abramovich-took-chelsea>

first English club – to have won every major UEFA trophy<sup>7</sup>, and since 2021 Chelsea is the fifth member of an illustrious list of clubs to have won every major trophy<sup>8</sup>.

We download annual reports and financial statements of Chelsea FC PLC for the seasons 2002/2003 to 2020/2021, i.e. 19 years, from UK's *Companies House*.<sup>9</sup> However, revenues are decomposed to matchday, commercial and broadcasting only for the last 11 seasons, i.e. 2010/2011 to 2020/2021.

Calculating the difference of changes in book equity from changes in book value of assets, it turns out that for seasons 2003/2004 to 2020/2021 the aggregated changes in book value of debt is almost £231mn. Adding this amount to the implied for the same period cumulative share capital increases £1.257bn<sup>10</sup>, which also includes debt converted to equity, gives us £1.488bn. This is approximately equal to “total debt” £1.5bn that RA is reportedly owed by the Blues, yet not asking to be repaid.

Looking at the whole picture of Chelsea's financial performance during RA's reign, i.e. from 2003/2004 to 2020/2021 based on publicly available data, we find that the book value of equity was £39.9mn in June 2003 and increased at £400.7mn in June 2021. RA pumped about £1.257bn through share capital increases into the club, while the cumulative net income was almost -£896.6mn for the seasons 2003/2004 to 2020/2021. Consequently, the total share capital increases more than compensated the cumulative losses, and the excess cumulative share capital increases were near 361mn for the same period.<sup>11</sup> As a result, during these 18 years the historical average of covered losses per annum in June 2021,  $Z_0 = £49.8mn$ , is taken into account in the valuation process of the brand name of the Blues and augment matchday revenues [see Equation (3)].

$$BNV_0 = \max \left\{ \lim_{T \rightarrow \infty} \sum_{t=1}^T \left[ R'_0 \cdot \prod_{j=1}^t \frac{(1+g_j)^j}{(1+r_j)^j} \right] - X_0, 0 \right\} \quad \text{Equation (3)}$$

where  $R'_0 = a_0 \cdot R_0 + Z_0$  are the augmented matchday revenues for the valuation of brand name.<sup>12</sup>

<sup>7</sup> Source: <https://www.uefa.com/uefachampionsleague/news/025d-0f5b873cb860-61d680b0f8bc-1000--who-has-won-a-clean-sweep>

<sup>8</sup> Source: <https://www.thesun.co.uk/sport/17638095/chelsea-club-world-cup-real-madrid-barcelona>

<sup>9</sup> Source: <https://find-and-update.company-information.service.gov.uk/company/02536231/filing-history>

<sup>10</sup> This is the cumulative share capital increases according to Clean Surplus Accounting (CSA) relationship for the period June 2004 to June 2021. The amount of £1.257bn can also be cross-validated by deducting £39.9mn (book equity in June 2003) and -£896.6mn (cumulative net income from June 2004 to June 2021) from £400.7mn (book equity in June 2021).

<sup>11</sup> The precise amount is £360.8mn and it is also equal to the deviation of £39.9mn from £400.7mn.

<sup>12</sup> If we estimated the club's total value (CTV) given a positive brand-name value, we would pin down  $a_0$  to 1.

We run Monte Carlo stochastic simulations based on Equation (3) with a value of  $T$  equal to 500 employing  $N = 10000$  replications. We set  $X_0$  equal to £59mn, i.e. almost the negative book equity value in absolute terms<sup>13</sup>, and we further assume the following:

- [1] The share  $a_0$  of matchday revenues relative to total revenues is the historical median (21.170%) of the ratio of matchday revenues to total revenues for the seasons 2003/2004 to 2020/2021, and the historical average of covered losses per annum  $Z_0$  equals £49.8mn for the same period.
- [2] Revenues  $R_0$  follow a normal distribution with mean equal to the historical average (£281.7mn) of revenues and standard deviation equal to the historical standard deviation (£103.7mn) of annual revenues for the seasons 2003/2004 to 2020/2021, while  $R_0$  is constrained to be between the historical 1<sup>st</sup> quartile (£207.2mn) and historical maximum value (£446.7mn) of revenues, for the same period. Alternatively, we truncate the normal distribution  $N(£281.7mn, £103.7mn)$  such that it takes values from £207.2mn to £446.7mn.
- [3] For the expected growth rate  $g$  of revenues we use a normal distribution, whose mean and standard deviation are, respectively, the historical median (2.134%) and interquartile range (1.028%) of UK annual GDP growth rate for the years 2003 to 2021. Also,  $g$  takes values between the historical minimum (-9.396%) and historical maximum (7.456%) values of the aforesaid GDP growth rate. Annual GDP growth rates are calculated from the annual time-series [PN2] of UK's seasonally adjusted GDP in chained volume measures (source: Office for National Statistics).
- [4] The discount rate  $r$  is normally distributed with mean and standard deviation being equal to the historical average (4.425%) and historical standard deviation (1.650%) of the quarterly time-series [CBRLBUKQ] of corporate borrowing rate (not seasonally adjusted) on loans from banks in the UK per annum for the period 2003:Q1 to 2016:Q4 (source: Bank of England and retrieved from FRED, Federal Reserve Bank of Saint Louis). Furthermore, the normal distribution  $N(4.425\%, 1.650\%)$  is bounded from below and above, and the lower and upper bounds are respectively equal to the historical minimum (2.650%) and historical maximum (7.310%) values of the aforementioned time-series of corporate borrowing rate.

According to the simulations, the fundamental value of Chelsea's brand name in June 2021 is more than £4.5bn (precisely £4.558bn), on average, and the 95% confidence interval ranges from £3.537bn to £5.855bn. Since RA declared that he is not asking for any loans to be repaid, we deduct the amount of almost £1.488bn he has put in the Blues until June 2021. As a result, the average asking price for

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<sup>13</sup> The numerous earned trophies (including 2 Champion League titles), the positive book equity values except for one season (2007/2008), and the covered losses during the seasons 2003/2004 to 2020/2021, respectively, constitute a strong indication of optimal management of Chelsea FC. Therefore, we could pin down the penalizing term  $X_0$  to zero in the valuation procedure however, we abstain from such an action for conservatism.

putting Chelsea FC up for sale becomes £3.070bn in June 2021, and the lower and upper bounds at 5% significance level are equal to £2.049bn and £4.367bn, respectively.

### **Robustness checks**

For robustness of our results we perform a battery of modifications in the simulations.

First, we employ two distributions, instead of a single value, for the share  $a_0$  of matchday revenues with respect to total revenues. Specifically, a truncated normal distribution and a uniform distribution are used. The normal distribution's mean and standard deviation are equal to the historical median (21.170%) and historical interquartile range (10.507%), respectively, of the ratio of matchday revenues to total revenues. Moreover, we truncate this normal distribution  $N(21.170\%, 10.507\%)$  such that it takes values within the interval of historical 1<sup>st</sup> quartile (15.793%) to historical 3<sup>rd</sup> quartile (26.300%) of the ratio of matchday revenues. Regarding the uniform distribution, a lower and upper bound equal to 15.793% and 26.300% are employed. So we perform two extra sets of simulations.

Second, we use the historical median (3.150%) and the interquartile range (2.998%) of the corporate borrowing rate on loans from banks in the UK per annum for the period 2003:Q1 to 2016:Q4 – instead of the respective historical average and historical standard deviation for the normal distribution of the discount rate  $r$  – and perform three extra sets of simulations. Specifically, one for each assumption (scalar, and two distributions) with respect to the ratio of matchday revenues to total revenues.

Finally, we combine in the valuation procedure the aforesaid three options with respect to the ratio of matchday revenues to total revenues and the two options for the discount rate, using this time revenues of the last 5 seasons of available data (2016/2017 to 2020/2021) instead of full sample (2003/2004 to 2020/2021). Particularly, the modified historical median value of the ratio of matchday revenues to total revenues becomes 14.913%, while the modified historical interquartile range is equal to 3.304% as the respective 1<sup>st</sup> and 3<sup>rd</sup> quartiles become, respectively, 13.370% and 16.674%. Furthermore, the modified historical average and historical standard deviation of revenues are £418.8mn and £35.6mn, respectively, while the historical 1<sup>st</sup> quartile is £407.4mn and historical maximum value is £446.7mn.

**Table 1** portrays estimates from all 12 valuation procedures employed in this paper and one can witness that there is a great degree of robustness in the estimated asking price for selling Chelsea FC.

**Table 1: Asking price for selling Chelsea FC from the point of view of RA**

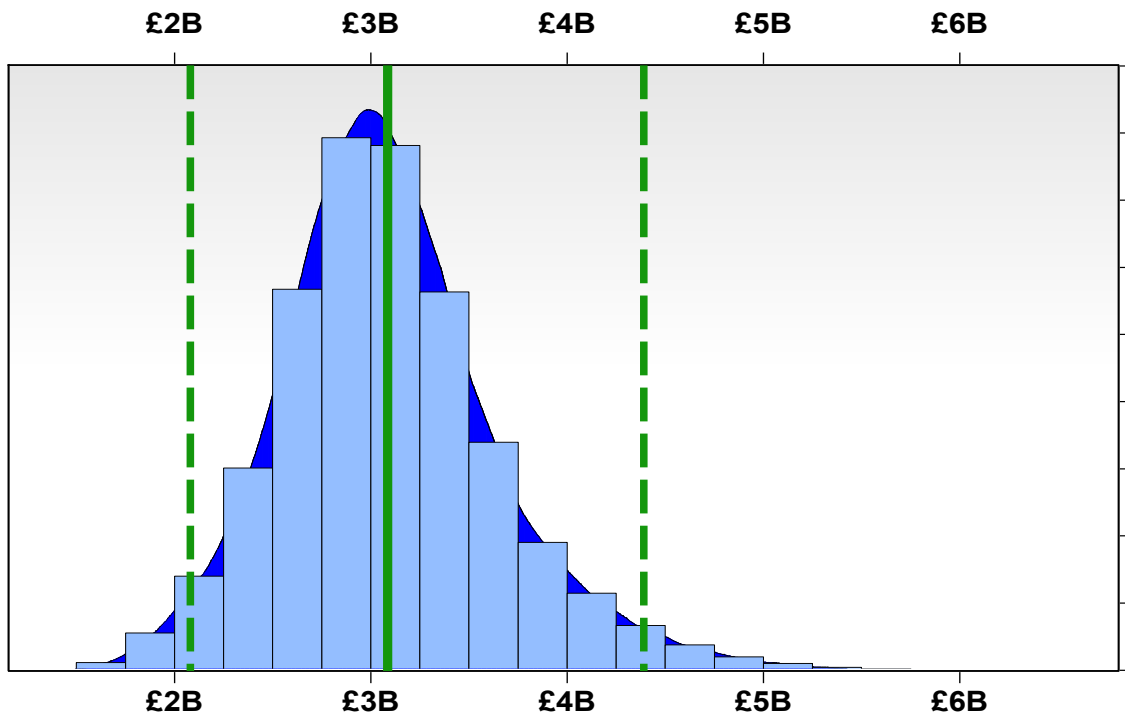
	<i>Ratio of matchday revenues to total revenues</i>	<i>Discount rate</i>	<i>Asking price in billion British pounds (£)</i> <i>[ 95% confidence interval ]</i>
Panel A: Full sample	Scalar	Case A	<b>3.070 [ 2.049, 4.367 ]</b>
		Case B	<b>3.167 [ 2.101, 4.510 ]</b>
	Truncated normal distribution	Case A	<b>3.062 [ 1.889, 4.640 ]</b>
		Case B	<b>3.177 [ 1.945, 4.848 ]</b>
	Uniform distribution	Case A	<b>3.055 [ 1.869, 4.650 ]</b>
		Case B	<b>3.176 [ 1.924, 4.813 ]</b>
Panel B: Last 5 seasons	Scalar	Case A	<b>2.991 [ 2.411, 3.662 ]</b>
		Case B	<b>3.096 [ 2.459, 3.807 ]</b>
	Truncated normal distribution	Case A	<b>3.008 [ 2.350, 3.744 ]</b>
		Case B	<b>3.110 [ 2.408, 3.898 ]</b>
	Uniform distribution	Case A	<b>3.004 [ 2.352, 3.742 ]</b>
		Case B	<b>3.113 [ 2.410, 3.920 ]</b>

**Table 1** shows the average asking price for selling Chelsea FC – under alternative sets of employed in the simulations assumptions – after the reduction of the amount corresponding to debt RA is owed by Chelsea as officially there is no intention in his recouping this amount. We estimate it at £1.488bn as the sum of implied cumulative share capital increases (£1.257bn) and accumulated debt changes (£231mn) for the seasons 2003/2004 to 2020/2021. Panel A utilizes full sample (2003/2004 to 2020/2021) of available data, while Panel B employs only the last 5 seasons of available data (2016/2017 to 2020/2021) for revenues. The ratio of matchday revenues to total revenues is either a scalar – specifically the historical median of matchday revenues expressed as share of total revenues – or, follows a truncated normal distribution or a uniform distribution. The normal distribution is bounded from below and above with the historical 1<sup>st</sup> quartile (15.793% for Panel A, 13.370% for Panel B) and historical 3<sup>rd</sup> quartile (26.300% for Panel A, 16.674% for Panel B) being the lower and upper bounds, respectively, of the ratio of matchday revenues to total revenues, and the mean and standard deviation are, respectively, the historical median (21.170% for Panel A, 14.913% for Panel B) and historical interquartile range (10.507% for Panel A, 3.304% for Panel B). The uniform distribution’s lower and upper bounds are, respectively, the historical 1<sup>st</sup> and 3<sup>rd</sup> quartiles of matchday revenues expressed as share of total revenues. The discount rate  $r$  follows a normal distribution whose mean and standard deviation are [1] the historical average (4.425%) and historical standard deviation (1.650), respectively, of the quarterly time-series of corporate borrowing rate on loans from banks in the UK per annum for the period 2003:Q1 to 20016:Q4 in *Case A*, or [2] the respective historical median (3.150%) and historical interquartile range (2.998%) in *Case B*, with lower and upper bounds being equal to the historical minimum (2.650%) and historical maximum (7.310%) values. The expected growth rate of revenues follows a normal distribution with lower and upper bounds being the historical minimum (-9.396%) and historical maximum (7.456%) values of UK’s GDP annual growth rates that are calculated from the seasonally adjusted GDP levels in chained volume measures, while the mean and standard deviation are the respective historical median (2.134%) and historical interquartile range (1.028%). Revenues are normally distributed with mean and standard deviation being the historical average (£281.7mn for Panel A, £418.8mn for Panel B) and standard deviation (£103.7mn for Panel A, £35.6mn for Panel B) of Chelsea’s revenues, and bounded from below (£207.2mn for Panel A, £407.4mn for Panel B) and above (£446.7mn for both Panel A and Panel B) with the historical 1<sup>st</sup> quartile and historical maximum value of Chelsea’s revenues. The average amount of covered losses per annum is  $Z_0 = £49.8mn$  and is incorporated in the valuation procedure since book equity increased from £39.9mn in June 2003 to £400.7mn in June 2021. The penalizing term  $X_0$  is equal to £59mn. We employ 10000 replications for each of the 12 Monte Carlo simulations based on Equation (3) with  $T = 500$  for the fundamental valuation model for sports clubs proposed by Bertsatos and Sapountzoglou (2021). In each of these 12 experiments, 10000 estimated values of Chelsea’s fundamental value of brand name are obtained and after subtracting £1.488bn, we find the average asking price for selling Chelsea FC as well as, the 2.5<sup>th</sup> and 97.5<sup>th</sup> percentiles for the construction of the asking price’s 95% confidence interval.

## Discussion

We combine the 12 valuation estimates of **Table 1** by calculating the average values. The average asking price is £3.086bn, and the average lower and average upper bounds, respectively, are equal to £2.181bn and £4.217bn at 5% significance level in June 2021. Repeating the calculations with the medians, instead of averaging, the respective numbers become £3.083bn, £2.226bn and £4.144bn. Furthermore, pooling all estimates ( $= 12 \cdot 10000$ ) from the 12 valuation procedures run gives us **Figure 1** that illustrates the histogram and distribution fit of the asking price for selling Chelsea FC. It turns out that the pooled average asking price is £3.086bn (green vertical solid line), whilst the associated confidence interval at 5% ranges from £2.076bn to £4.390bn (green vertical dashed lines).

**Figure 1: Histogram and kernel density of the asking price for selling Chelsea FC from the point of view of RA**



**Figure 1** shows the histogram and kernel density (distribution fit) of the asking price for selling Chelsea FC by pooling the 120000 estimates from the 12 valuation procedures run – under alternative sets of employed in the simulations assumptions – after the reduction of the amount corresponding to debt RA is owed by Chelsea FC as officially there is no intention in his recouping this amount. We estimate it at £1.488bn as the sum of implied cumulative share capital increases (£1.257bn) and accumulated debt changes (£231mn) for the seasons 2003/2004 to 2020/2021. Details about the simulations and assumptions employed are gathered in caption of **Table 1**. The pooled average asking price is £3.086bn (green vertical solid line) and the pooled median is £3.039bn, whilst the associated 2.5<sup>th</sup> and 97.5<sup>th</sup> percentiles (green vertical dashed lines) are respectively, £2.076bn and £4.390bn.

To find the updated price tags incorporating the time value of money one has to calculate the future value in 2022. Suppose that we are interested in finding the updated value of the average asking price in April 2022. One option is to employ UK's inflation rate for the period June 2021 to April 2022 as the interest rate (for conservatism, the smaller inflation rate between that from monthly CPI values and that from 12-month CPI values) for the calculation of the future value. In other words, the



inflation-adjusted value would be  $FV_{April\ 2022} = £3.086bn \cdot (1 + z)$  with  $z$  being the cumulative inflation rate from June 2021 to April 2022. One other option is the use of a discount rate employed in the simulations (for conservatism, the historical minimum value 2.650% could be applied) as the interest rate for the future value's calculation. In such a case, the future value of the average asking price in April 2022 would be equal to  $FV_{April\ 2022} = £3.086bn \cdot (1 + 2.650\%)^{10/12} = £3.154bn$ .

As RA declared that he is not asking for any loans to be repaid, i.e. almost £1.5bn through both equity and debt, Stamford Bridge will open its gates to Chelsea's next custodian – major shareholder – with initial book value of equity £400.7mn enhanced by written off debt £231mn based on available data up to June 2021. Alternatively, RA's successor will begin his/her journey singing *Blue is the Colour* with a non-negligible capital buffer of about £632mn aiming to bring more titles to the Bridge. In fact, this amount more than covers one-season needs of the club as during RA's reign, the historical maximum value and historical average of total costs are about £588mn and £332mn, respectively.

## **Conclusions**

To conclude, we provide ample evidence that the much-discussed price tag of at least £3bn for selling Chelsea FC is a reasonable asking price – from a fundamental perspective – on behalf of Roman Abramovich after writing off almost 1.5bn loans. We witness that any asking price in the 95% confidence interval £2.076bn to £4.390bn is fundamentally justified with the average being equal to £3.086bn in June 2021. However as “it takes two to tango” for the deal to close, it remains to see whether there is an accord with a final price in the aforementioned interval of asking prices.

## **Declaration of conflict interests**

We declare that the views expressed in this paper are our own and do not necessarily represent the position of the institutions we are affiliated with.

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The Department is the oldest Department of Economics in Greece with a pioneering role in organising postgraduate studies in Economics since 1978. Its priority has always been to bring together highly qualified academics and top quality students. Faculty members specialize in a wide range of topics in economics, with teaching and research experience in world-class universities and publications in top academic journals.

The Department constantly strives to maintain its high level of research and teaching standards. It covers a wide range of economic studies in micro-and macroeconomic analysis, banking and finance, public and monetary economics, international and rural economics, labour economics, industrial organization and strategy, economics of the environment and natural resources, economic history and relevant quantitative tools of mathematics, statistics and econometrics.

Its undergraduate program attracts high quality students who, after successful completion of their studies, have excellent prospects for employment in the private and public sector, including areas such as business, banking, finance and advisory services. Also, graduates of the program have solid foundations in economics and related tools and are regularly admitted to top graduate programs internationally. Three specializations are offered: 1. Economic Theory and Policy, 2. Business Economics and Finance and 3. International and European Economics. The postgraduate programs of the Department (M.Sc and Ph.D) are highly regarded and attract a large number of quality candidates every year.

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