THE EFFECT ON INFLATION RATE ON THE TRANSFER SPEND OF EUROPEAN FOOTBALL CLUBS

**Introduction**

There has been an increase in the amount of money being paid for football players in the current transfer market with the players being valued as much as 200 million pounds. The price of players on average has gone up by 41% since 2015. Along with this, the top European giants in football have found themselves on the brink of financial turmoil and are hugely under debt because of the lack of ticket sales. Therefore, I have been drawn towards **finding the effect of the European economic inflation rate on the total revenue of football (soccer) clubs in the top 5 European leagues.**

The net transfer spend is equal to the total revenue through sales of players minus the total expenditure through the purchase of players from other clubs. This paper only focuses on the net transfer revenue of top 5 European leagues in the world, from 2010 to 2018, which are the following: Premier League (England), Serie A (Italy), La Liga (Spain), Bundesliga (Germany), and Ligue 1(France). Out of these 5 leagues, the biggest one is the premier league, based in England, in terms of popularity, competitiveness and the amount of investment. The expenditure of a club occurs in two transfer windows, the winter transfer window that starts and ends in January, and the summer transfer window that starts in June and ends at the end of August. Premier League clubs spent 36.5 percent of the total money spent by the top five leagues on transfers in 2018. Since 2010, English top-flight clubs have spent a total of -€5.71 billion on transfers (78.3 percent of the overall big-5 league deficit). Since 2010, Manchester City has spent the most on transfer indemnities (€1.47 billion) along with Manchester United. It also has the biggest negative transfer operations balance sheet (-€1.03 billion) (James, 2018). In 2018, there was a drop in the transfer fee paid out by big-5 league clubs for the first time since 2012. A drop of 2.4% was recorded in comparison to 2017 (€5.82 billion instead of €5.96). Since 2010, the English top division clubs have spent 1.6 times more than the Italian clubs, 2.1 times more than the Spanish, 2.8 times more than the German, and 3.1 times more than the French (Poli and Ravenel, 2018**).**

**Table

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*Figure 1: (James, 2018)*

There has also been an increase in not only the investment but also the value of the top players around the world. An example of this case is the transfer of Neymar Júnior in 2017, as Paris Saint Germain (Ligue 1 club) paid € 222 million to FC Barcelona, making him the most expensive transfer to this date. In Figure 1, there is a gradual increase in the transfer fee investment of big-5 league clubs which is also directly correlated to an increase in the value of players. However, despite the amount of money spent in the French league, 5 teams from this league are present in the top ten rankings for clubs having a positive net transfer spend.

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*Figure 2: (James, 2018)*

There are no English Premier League clubs that have a positive net transfer spend. High spending clubs like Manchester City and PSG are ranked number 1 and 2 respectively among the teams with the most negative net transfer spend for transfer operations between 2010 and 2018, therefore leading to less revenue.

Relative to this, the inflation rate in Europe has also changed significantly between the years 2010 and 2018. This statistic down below shows that the rate of inflation has varied a lot during the specified period. The term inflation, also known as currency devaluation, refers to the steady rise in prices of finished products. In this period, the inflation rate has increased in 4 of the 8 years, while there has been a decrease in the rest of it.

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*Figure 3:* [*World Bank*](https://datatopics.worldbank.org/world-development-indicators/)

This paper will compare the data from transfermarkt.us, a company known for collecting all types of statistics relating to football, and data from the World Bank Inflation Rate survey (2010-18) to analyze the effects of European inflation rate on the total revenue of clubs in the top-5 leagues. I will use a regression analysis to control for the omitted variables of ticket sales and investment made by the owner. Regression analysis is easy to interpret, and it will provide treatment effect of inflation rate after controlling for the omitted variable bias.

**Data**

 The data that I will be using for my project includes the net transfer spend of each club in the top 5 leagues. This data is obtained from "thetransfrmarkt.us", a company that collects all types of statistics relating to football. The other set of data includes the general inflation rate between 2010 and 2018 throughout Europe. This set of data was obtained from World Bank Inflation Rate Survey.

The data for this paper was constructed in the following way: I obtained the data from "thetransfrmarkt.us" website in a xlsx format. This data set contained information about the income and expenditures (millions of euros) of the top 5 European leagues that have taken place between the years 1996 and 2021. To meet my specific requirements, I transferred the data into R after filtering it to show results between 2010-18. Furthermore, I calculated the revenues by using a formula in excel. This data includes the income and expenditure from both the summer and the transfer windows. On the other hand, the data on the European inflation rate was also obtained in an xlsx format from Statista. The data was filtered in excel to meet the period requirement for my paper.

I want to find the effect of inflation rate on the total revenue of the top 5 European leagues while keeping variables like owners’ investment and ticket sales in the league constant. Figure 4 denotes the descriptive variables of all the total revenue for all 5 leagues and the inflation rate across 8 years. In the first row we see the variable of the total revenue (in millions of Euros) for the top 5 European leagues. The average total revenue of all the leagues over the 8-year period is €11841.125 million. However, there is also a huge difference of about €7040 million between the maximum and the minimum revenues. The second variable is the inflation rate in Europe between 2010 and 2018. In the second row, the data displays that there was one odd year where the rate of inflation was negative. However, the average rate of inflation over the 8 years is positive and therefore, we can assume that there was one odd year in the 8-year period.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Column1** | **Mean** | **Median** | **Standard Deviation** | **Maximum** | **Minimum** |
| Total revenue (millions €) | 11841.125 | 11679.5 | 2571.556807 | 15612 | 8572 |
| Inflation rate (%) | 1.37016667 | 1.4693 | 1.141574275 | 3.288 | -0.0542 |

*Table 1: Descriptive Statistics*

Through this information available to me, I will be able to find out the relationship between the two variables mentioned above, while keeping some variables constant to remove the possibility of a bias.

**Identification Strategy**

Below is the regression that is used to analyze the causal effect of inflation rate. “P(i)” includes all the control variables for notation purposes.

Yi = ∝ + β1 X + β2 Pi + ଽ i

= Total revenue of football clubs in top-5 European leagues (in millions of Euros)

B1 = treatment effect of the inflation rate (in percent)

B2 = effect of all other controls on total revenue for football clubs

Pi = [ticket sales, owners’ investment]

ଽ i = error term

The treatment for this regression is the inflation rate which is depicted in percentages over a period of 8 years. The outcome variable is the total revenue for the top-5 European leagues grouped by year. This variable is presented in millions of Euros. I have also attempted to solve for omitted variable bias by controlling for ticket sales and owners’ investment. I expect that the two variables will independently effect the total revenue of the clubs in the top-5 leagues. They are also correlated with the treatment effect. Therefore, this is an example of Omitted Variable Bias (OVB). I have run a straightforward regression to find the causal relationship between the inflation rate and the total revenue of football clubs (1).

**Preliminary Results**

Table 2 shows the results after running the simple regression (1). Surprisingly, a higher inflation rate has a negative effect on the total revenue of top-5 European leagues. In my regression analysis, the value of B1 is equal to -1350.9. **This means that as the inflation rate increases by 1%, there will be a decrease in the total revenue of the 5 European leagues by €1350.9 (in million).** This hypothesis is surprising as it shows that inflation has not helped or aided the football economy across Europe. This data is taken between 2010 and 2018, while holding constant some of the possible omitted variables. The regression results between the total revenue and inflation rate could be lower in case the above-mentioned variables were not taken or controlled for. In that case, the causal effect of inflation rate would have been lower or could also even be positive.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column1** | **Estimate** | **Std. Error** | **t value** | **Pr(>|t|)** |
| (Intercept) | 13623.6 | 1165 | 11.694 | 2.36e-05 \*\*\* |
| Inflation\_rate | -1350.9 | 670.3 | -2.015 | 0.0905 . |

*Table 2: Regression Results*

**Conclusion**

The analysis in this paper shows that the inflation rate has had a negative effect on the total revenue of the top-5 European leagues between the years 2010 and 2018.

At first, the effect on inflation rate was unclear by just looking at the filtered data. The revenue had a gradual increase each year, while the inflation rate varied throughout the years. In the year 2015, the rate of inflation was at an all-time low over the 8-year period. However, if you compare the revenues from 2014 and 2015, you can see an increase in the revenue by € 1360 million. Just looking at this, you would assume that there is a negative relationship between the two variables. Despite the analysis proving the negative relationship, there are also some years where a positive effect is shown on the total revenue. Overall, looking at the entire 8 years, the revenue of the European leagues decreases by €1350.9 (in million) when the inflation rate increases by 1%. If this holds true for **present and the future**, then it is very likely that the clubs will have a huge deficit each calendar year as the inflation rate is around 6.2% in 2021. Along with this, the top European giants in football will find themselves on the brink of financial turmoil due to the combined effect of inflation rate and the covid-19. I believe clubs should look at other means of revenue to survive in the long run.

**Bibliography**

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