

## **COST STICKINESS IN FOOD AND ALLIED SECTOR AND TANNERY INDUSTRY LISTED UNDER DHAKA STOCK EXCHANGE**

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### **Abstract**

The paper is intended to examine the cost stickiness of companies in Food & Allied sector and Tannery Industries in Dhaka Stock Exchange. In this context, the study has investigated whether cost of goods sold (COGS); selling, general and administrative (SG&A) costs and operating costs (OC) behave asymmetrically with the change in sales revenue. The study is covered for the period 2012-2013 to 2016-2017 for all the listed companies in Food & Allied Sector and Tannery Industries in Dhaka Stock Exchange. Three different hypotheses are determined and to test the hypotheses, regression analysis of the panel data has been carried out. The results show that cost of goods sold (COGS) is cost sticky that is cost of goods sold behave asymmetrically with the sales change but selling, general and administrative costs and operating costs do not behave asymmetrically with the sales change. It is found that COGS increase 0.97 percent for 1 percent increase in sales revenue but decrease 0.61 percent for 1 percent decrease in sales revenue, which indicates COGS is not decreasing equivalent to sales decrease and it is cost sticky.

**Keywords:** Cost of goods sold, Selling, General and administrative costs, Operating costs, Sales Revenue, Cost stickiness.

### **1. Introduction**

Cost stickiness phenomenon defined as the degree of increase in costs with volume of sales increase is larger than the degree of decrease in costs with the same volume of sales decrease. Traditional model of cost behavior assumes that variable costs change proportionately and symmetrically with change in the activity volume, but cost stickiness provide a new way to think about the behavioral aspect of costs (Alavinasab S. M, 2017). This concept is discovered by Anderson M., Banker R., & Janakiraman S. (2003) that selling, general and administrative costs do not increase or decrease with the same volume of change in sales revenue.

Also, the cost stickiness is investigated along with the economic growth and recession. Awad E. A. Ibrahim (2015) indicated that the costs including SG&A, COGS and OC respond asymmetrically to demand change, whether both the SG&A and COGS were sticky, but OCs were anti-sticky. The nature and magnitude of the asymmetric cost behavior differed in contrasting economic conditions. In the prosperity period before the 2008 financial crisis, SG & A were sticky, but anti-sticky in the recession period after the 2008 financial crisis. According to Alavinasab S. M. (2017) for a 1 percent demand increase SG&A increased more in the prosperity period than in the recession period and for 1 percent decrease in demand, SG&A decreased by a larger extent in the recession period after the financial crisis than in the prosperity period before the financial crisis.

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This paper is aimed to find out the cost stickiness in Food & Allied sector and Tannery Industries in Dhaka Stock Exchange. It has examined that whether Cost of Goods Sold (COGS), Selling, administrative and General (SG&A) and Operating Costs (OC) of the companies of these sectors changes asymmetrically with an equivalent sales revenue change or not, that means whether COGS, SG&A and OC are cost sticky or not.

## 2. Review of Related Literature

The literature review is a summary of previous research on a research topic. After summarizing the research findings if there is any gap in the research then further research can be proceed. So, it is necessary to conduct a review of related literature on a research topic. Analyzing various research, done in different countries on cost stickiness the following reviews are found.

It is found in the research that costs increase more when activity rises than they decrease when activity falls by an equivalent amount. Examining over 7,629 firms they found that selling, general and administrative (SG&A) costs are sticky; SG&A costs increased 0.55% per 1% increase in sales revenue but decrease only 0.35% per 1% decrease in sales revenue (Anderson et al., 2003).

Audit fees are sticky that is audit fees do not immediately or fully adjust to changes in their determinants. Audit fees also respond to changes leading to an increase more quickly than they respond to changes leading to a decrease. The difference between positive and negative fee adjustments declines over periods longer than one year and is no longer significant when four-year periods are considered (Villiers C. D., Hay D. & Zhang Z., 2014).

Analyzing cross-sectional data from hospitals in Washington State, the study has tested whether overhead costs are proportional to overhead activities. It has found that the proportionality hypothesis can be rejected for most of the overhead accounts. On average across the accounts, the average cost per unit of activity overstates marginal costs by about 40% and in some departments by over 100%. Thus, the average cost per activity should be used with a great deal of caution in decisions (Noreen and Sodestrom, 1994).

Investigating the sticky cost behavior using a sample of US, UK, French, and German firms it has found that costs of French and German firms are stickier than costs of UK and US firms. It conjectured that this result is attributable to differences in systems of corporate governance and managerial oversight. Costs tend to be less sticky over longer time-horizons and when firms sustain larger drops in revenue. Firm-specific and industry characteristics also impact on levels of cost stickiness (Calleja, Stelias and Thomas, 2006).

Sustenance has confirmed for the CSR-related cost stickiness hypothesis in this study. The CSR-related cost behavior pattern across business cycles found some evidence of cost stickiness during an expansionary phase of the economy and cost anti-stickiness during a recessionary phase but only for the tactical CSR component (Habib, A. & Hasan, M.M., 2016).

An empirical finding suggested that in the case of firms with high (low) organization capital, SG&A expenses exhibit sticky (anti-sticky) cost behavior (Venieris, G., Naoum, V. C., & Vlismas, O., 2015).

At the study the authors have examined whether the magnitude of the activity changes is the driving force for 'sticky cost'. It has found that SG&A and COGS do not exhibit sticky cost behavior for small revenue changes. However, when revenue changes by more than ten percent, costs exhibit sticky behavior. It has also found that manufacturing is the "stickiest" industry due to high levels of fixed assets and inventory, while merchandising is the "least sticky" industry due its highly competitive environment. The financial and service industries exhibited some level of stickiness (Subramaniam and Weidenmier, 2003).

This research has confirmed extant research relating to cost stickiness for hospitals. Cost stickiness had primarily focused on the behavior of SG&A with respect to the sales volume of manufacturing firms. The study found that operating costs are also sticky at the hospital level (Balakrishnan and Gruca, 2008).

Again, another research has illustrated the fragility of empirical results related to the characterization of SG&A costs as sticky. Although it finds weak evidence consistent with sticky SG&A costs, the results are quite sensitive to assumptions about what managerial behavior is implied by the sticky cost hypothesis. Further, it found no consistent mode of cost behavior when it tests the sticky cost model using other types of cost (e.g., labor costs, R&D costs, PP&E costs) that are as likely as SG&A to be subject to managerial discretion (Anderson and Lanen, 2007).

The results of this study have showed that all costs studied, namely selling, general and administrative cost (SG&A), cost of goods sold (COGS) and operating costs (OC) behave asymmetrically to demand change where all three costs were sticky during 2008-2013. Also, result reveals that the behavior of all three costs were sticky during the prosperity period (2008-2010). In addition, results indicate that all three costs behave anti-sticky during the recession period (2010-2013). Thus, the regression analysis results confirmed the three-study hypothesis. Further, the results indicated that costs were more stickiness in prosperity period as compared to recession period (Alavinasab S. M., Mehrabanpour M.R. & Ahmadi A, 2017).

Investigating empirically how selling, general and administrative costs and cost of goods sold behave in the recession period with the pre-recession period as a benchmark, it has found that, although the total costs (as a percentage of sales revenue) on average do not differ, both SGA and COGS changes became less sensitive to sales revenue changes in the recession period, and the stickiness of the two costs also changed but in different directions in the recession period. Since costs and activity relationship was greatly influenced by management decisions (He H., 2014).

From the above overview it is found that there is no research on cost stickiness has been done on the food and allied sector and tannery industries of Bangladesh. In order to run the economic condition of the organizations smoothly, it is important to understand the effect of cost stickiness. Securities and Exchange Commission (SEC) of Bangladesh can work better if the cost stickiness is understood in a better way at

different sectors of SEC. As a result, a research was necessary to contribute at these research gaps and to minimize the research gap at the food and allied sector and listed tannery industries in Bangladesh the study has been done.

### 3. Objectives of the Study

The objectives of this study are as follows:

- i. To examine the cost stickiness of the companies in the Food and Allied Sector and listed Tannery Industries under Dhaka Stock Exchange.
- ii. To find out whether cost of goods sold, selling, general and administrative costs and operating costs of the companies behave asymmetrically with the level of sales revenue.
- iii. To provide recommendations according to the results of the research problems.

### 4. Methodology of the Study

#### 4.1 Data and Sample Selection

The analysis is done based on the secondary data. Raw data has collected from the financial statements of the listed companies in Food and allied sector and Tannery Industries of Dhaka Stock Exchange by visiting the websites and searching at internet.

There are 22 sectors and total 580 companies under Dhaka Stock Exchange (DSE). This study has selected 2 sectors, the food and allied sector and listed tannery industries and there are 24 companies under DSE. Statistical population includes these 24 company's financial statements' data for the years 2012-2013 to 2016-2017 and to select the sample, the following standards have been considered:

- Companies with the same financial year ended is 1<sup>st</sup> July to 30<sup>th</sup> June.
- Completeness and availability of the data for the companies for selected time that means having the complete information for financial statements.

Based on above two measures the purposive sampling is done on the financial statements data of Food & Allied Sector and listed Tannery Industries under Dhaka Stock Exchange for the time period 2012-2013 to 2016-2017. Through the purposive sampling then 59 years companies' data were selected from the 24 companies of Food & Allied Sector and listed Tannery Industries under DSE and the data were analyzed by statistical software SPSS version 20.

#### 4.2 Hypotheses

To test the cost stickiness, the following null hypotheses has been formed:

*H<sub>01</sub>: COGS do not respond asymmetrically to an equivalent sales change.*

*H<sub>02</sub>: SG&A do not respond asymmetrically to an equivalent sales change.*

*H<sub>03</sub>: OC do not respond asymmetrically to an equivalent sales change.*

4.3 Model Specification

The research hypotheses were tested through the following models based on Anderson et al.'s (2003) model:

**Model-1: COGS:**  $\text{Log}(\text{COGS}_{i,t}/\text{COGS}_{i,t-1}) = \beta_0 + \beta_1 * \text{Log}(\text{Sales}_{i,t} / \text{Sales}_{i,t-1}) + \beta_2 * \text{JuneDummy}^*$

$\text{Log}(\text{Sales}_{i,t} / \text{Sales}_{i,t-1})$

**Model-2: SG&A:**  $\text{Log}(\text{SG\&A}_{i,t}/\text{SG\&A}_{i,t-1}) = \beta_0 + \beta_1 * \text{Log}(\text{Sales}_{i,t} / \text{Sales}_{i,t-1}) + \beta_2 * \text{JuneDummy}^*$

$\text{Log}(\text{Sales}_{i,t} / \text{Sales}_{i,t-1})$

**Model-3: OC:**  $\text{Log}(\text{OC}_{i,t}/\text{OC}_{i,t-1}) = \beta_0 + \beta_1 * \text{Log}(\text{Sales}_{i,t} / \text{Sales}_{i,t-1}) + \beta_2 * \text{JuneDummy}^*$

$\text{Log}(\text{Sales}_{i,t} / \text{Sales}_{i,t-1})$

Where,

$\text{COGS}_{i,t}$  = cost of goods sold for the firm i at the time t.

$\text{SG\&A}_{i,t}$  = selling, general and administrative costs for the firm i at the time t.

$\text{OP}_{i,t}$  = operating costs for the firm i at the time t.

$\text{Log}(\text{COGS}_{i,t}/\text{COGS}_{i,t-1})$  = natural logarithm ( cost of goods sold in current year divided by cost of goods sold in prior year).

$\text{Log}(\text{SG\&A}_{i,t}/\text{SG\&A}_{i,t-1})$  = natural logarithm (selling, general and administration costs in current year divided by the selling, general and administrative costs in prior year).

$\text{Log}(\text{OC}_{i,t}/\text{OC}_{i,t-1})$  = natural logarithm (operating costs in current year divided by operating costs in prior year).

$\text{Log}(\text{Sales}_{i,t} / \text{Sales}_{i,t-1})$  = natural logarithm (net sales in current year divided by net sales in prior year).

JuneDummy = dummy variable that takes the value of 1 if the current net sales are less than the prior year sales and it takes the value 0 otherwise.

5. Analysis & Interpretation of the data

Descriptive statistics

The descriptive statistics of the study are shown in the Table-(1):

Table no. 1: Descriptive Statistics

	LOGSales	LOGCOGS	LOGSG&A	LOGOC
Mean	.025	.030	.091	.092
Maximum	1.481	1.433	2.683	2.683
Minimum	-1.280	-9.345	-4.948	-8.840
Std. Dev.	.417	.366	.410	.466
Observations	59	59	59	59

Source: Annexure-1 analyzed at SPSS.

From the descriptive statistics the value of mean, maximum, minimum and standard deviation are represented. The variable LOGOC that means log value of operating costs has the highest mean value 0.092 and the variable LOGSales has the lowest mean value 0.025. Again, the LOGOC has the highest standard deviation value 0.466 and the LOGCOGS has the lowest standard deviation value 0.366.

#### *Correlation Coefficients*

Table-(2) shows the correlation coefficient of the study:

**Table no. 2: Correlation Coefficients**

	LOGSales	LOGCOGS	LOGSG&A	LOGOC	JuneDummy LOGSales
LOGSales	1.000	.946	.195	.209	.731
LOGCOGS	.946	1.000	.286	.280	.593
LOGSG&A	.195	.286	1.000	.888	.050
LOGOC	.209	.280	.888	1.000	.003
JuneDummy LOGSales	.731	.593	.050	.003	1.000

Source: Annexure-1 analyzed at SPSS.

The table no 2 shows that LOGSales has the highest correlation coefficient with LOGCOGS that is 0.946 and the lowest correlation coefficient with LOGSG&A that is 0.195. LOGCOGS has highest correlation coefficient with LOGSales and lowest correlation coefficient with LOGOC that is 0.280. Then LOGSG&A has the highest correlation coefficient with LOGOC that is 0.888 and the lowest correlation coefficient with LOGSales. LOGOC has the highest correlation with LOGSG&A and the lowest correlation with LOGSales that is 0.209.

#### *Hypotheses Results*

**Ho<sub>1</sub>: COGS do not respond asymmetrically to an equivalent sales change.**

#### **Analysis:**

**Table no. 3: Results of panel data regression analysis for Model-1**

Model	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_1+\beta_2$	Adjusted R <sup>2</sup>	F-statistic	Durbin-Watson	Significance
Model-1: COGS	-.03	.97	-.36	.61	.91	301	2.06	.000

Note: Significant at 5% level of significance.

Source: Annexure-1 analyzed at SPSS.

Table no. 3 represents the results of regression analysis for the total study period of 2012-2013 to 2016-2017. The analysis of the model-1 reveals that, Adjusted R<sup>2</sup> is 0.91. Which explains that about 91 percent of the total variations in COGS costs are explained by the model while remaining 9 percent is caused by other factors and the Durbin-Watson statistic suggests that there is no evidence of autocorrelation. In addition, the coefficients  $\beta_1$  and  $\beta_2$  are statistically significant at the 5% level. The coefficient  $\beta_1$  suggesting that 1 percent increase in sales results in .97 percent

increase in COGS. The coefficient  $\beta_2$  is negative and statistically significant at  $-.36$ . Which indicate that if sales will be decreased by 1 percent, COGS will be decreased by  $.36$  percent. Also, the result shows that  $\beta_1 + \beta_2 < \beta_1$ , it means that 1 percent decrease in sales leads to  $0.61$  percent decrease in COGS.

*Comment:* The p value is less than the significance level then the null hypothesis is rejected, and it is determined that COGS responds asymmetrically to an equivalent sales change.

**Ho<sub>2</sub>: SG&A do not respond asymmetrically to an equivalent sales change.**

**Analysis:**

**Table no. 4: Results of panel data regression analysis for Model-2**

Model	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_1 + \beta_2$	Adjusted R <sup>2</sup>	F-statistic	Durbin-Watson	Significance
Model (2) SG&A	.04	.34	-.35	-.01	.02	1.69	2.24	.194

Note: Significant at 5% level of significance.  
Source: Annexure-1 analyzed at SPSS.

Table no. 4 indicates model-2 analysis and here the Adjusted R<sup>2</sup> is  $0.02$ . Which explain that about 2 percent of the total variations in SG&A costs are explained by the model while remaining 98 percent is caused by other factors. In the meantime, the Durbin-Watson statistic suggest that there is no evidence of autocorrelation. In the table it is shown that the coefficients  $\beta_1$  and  $\beta_2$  are not statistically significant at the 5% level. The coefficient  $\beta_1$  suggesting that 1 percent increase in sales results in  $.34$  percent increase in selling, general and administrative costs. The coefficient  $\beta_2$  is negative at  $-.35$  and the results show that  $\beta_1 + \beta_2 < \beta_1$ , it means that 1 percent decrease in sales leads to  $0.01$  percent decrease in selling, general and administrative costs.

*Comment:* The p value is greater than the significance level then the null hypothesis is accepted that selling, general and administrative costs (SG&A) do not respond asymmetrically to an equivalent sales change.

**Ho<sub>3</sub>: OC do not respond asymmetrically to an equivalent sales change.**

**Analysis:**

**Table no. 5: Results of panel data regression analysis for Model-3**

Model	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_1 + \beta_2$	Adjusted R <sup>2</sup>	F-statistic	Durbin-Watson	Significance
Model (3) OC	.01	.50	-.63	-.13	.06	2.83	2.24	.068

Note: Significant at 5% level of significance.  
Source: Annexure-1 analyzed at SPSS.

Table no. 5 represents model-3 results, that Adjusted R<sup>2</sup> is  $.06$  that means about 6 percent of the total variation in Operating costs are explained by the model and remaining 94 percent is caused by other factors. Durbin-Watson value indicate that

there is no serial correlation.  $\beta_1$  value is .50,  $\beta_2$  value is -.63 and  $\beta_1 + \beta_2 < \beta_1$ , which indicate 1 percent increase in sales results in .50 percent increase in operating costs and 1 percent decrease in sales results in .13 percent decrease in operating costs.

*Comment:* The p value is greater than the significance level so, the null hypothesis is accepted, and it is concluded that the operating costs (OC) do not respond asymmetrically to an equivalent sales change.

From the results, the study identified that the null hypothesis of cost of goods sold is rejected i.e., cost of goods sold is cost sticky. On the other hand, the null hypotheses of selling, general and administrative costs and operating costs are accepted i.e., selling, general and administrative costs and operating costs are cost non-sticky.

## 6. Conclusion

The traditional concept of cost behavior is variable cost changes proportionately and symmetrically with the level of activity, but over past decade new behavior of cost is invented by many researchers. That cost of goods sold, selling, general and administrative costs and operating costs remain sticky with the level of activity changes. Throughout the literature review it has found that there is no research done on the food and allied sector and listed tannery industries in Bangladesh. So, the primary objective of this study must examine the cost stickiness of the companies of the food and allied sector and listed tannery industries under Dhaka Stock Exchange. Through the research, this problem is analyzed whether COGS, SG&A and OC behave asymmetrically with the sales change that is the activity level and the results show that COGS is cost sticky, but SG&A and OC are not cost sticky. Therefore, it is recommended that cost of goods sold behave asymmetrically and selling, general and administrative costs and operating costs behave symmetrically in the food and allied sector and listed tannery industries under Dhaka Stock Exchange (DSE) in Bangladesh.

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### Annexure- 1

#### Data Related to Sales Revenue, Cost of Goods Sold, Selling, General and Administrative Costs and Operating Costs

Year	June Dummy	Log(Sales <sub>i,t</sub> / Sales <sub>i,t-1</sub> )	JuneDummy*Log (Sales <sub>i,t</sub> / Sales <sub>i,t-1</sub> )	Log(COGS <sub>i,t</sub> / COGS <sub>i,t-1</sub> )	Log(SG&Ai <sub>t</sub> / SG&Ai <sub>t-1</sub> )	Log(OC <sub>i,t</sub> / OC <sub>i,t-1</sub> )
2012-13	0	0.049697136	0	0.048508463	0.065449862	0.065313572
2013-14	0	0.10539208	0	0.112848322	0.303539548	0.086029248
2014-15	0	0.088214285	0	0.100686449	0.117012361	0.053061034
2015-16	0	0.103181146	0	0.118806129	0.084098142	0.062199655
2016-17	0	0.129334181	0	0.133234911	0.19121309	0.124275366
2012-13	1	-0.173837011	-0.173837011	-0.207942352	0.082492541	0.167496867
2013-14	0	0.151037223	0	0.184803524	-0.171252021	-0.2336275
2014-15	1	-0.334442768	-0.334442768	-0.336976888	0.053686743	0.024434544
2015-16	1	-0.303253514	-0.303253514	-0.319072692	-0.39521766	-0.25192992
2016-17	1	-0.212609296	-0.212609296	-0.240529117	-0.201143549	-0.104059427
2012-13	0	0.287405575	0	0.17955225	0.196671764	0.190919173
2013-14	0	0.072079572	0	0.063226053	0.112117221	0.084959402
2014-15	0	0.01582967	0	-0.03078857	0.077840737	0.089153493
2015-16	1	-0.208298321	-0.208298321	-0.032697985	0.227322478	0.207960022
2016-17	0	0.029793497	0	0.033747317	0.103626465	0.061789711
2013-14	0	0.046363673	0	0.03169184	-0.084433425	-0.084433425
2014-15	0	0.286754618	0	0.270555794	0.013951535	0.013951535
2015-16	0	0.047745125	0	0.029110781	-0.04072153	-0.04072153
2012-13	1	-0.027167637	-0.027167637	-0.078023956	-0.089736785	-0.089736785
2013-14	1	-0.392561962	-0.392561962	-0.154984357	2.68376856	2.68376856
2014-15	0	0.106211939	0	-0.083678583	-0.212668429	-0.212668429
2012-13	0	0.034556074	0	0.047651469	0.070229161	0.070229161
2013-14	0	0.0117498	0	0.015639519	0.034489677	0.034489677
2014-15	0	0.03152897	0	-0.059025019	-0.059265556	-0.059265556
2015-16	1	-0.066494239	-0.066494239	-0.028065644	-0.016654028	-0.016654028
2016-17	1	-0.267966352	-0.267966352	-0.29568595	-0.053491475	-0.053491475
2013-14	0	0.218780942	0	0.218615358	0.131655912	0.028027896
2014-15	1	-0.053031263	-0.053031263	-0.05057696	-0.165794757	-0.181879461
2015-16	0	0.205840384	0	0.205987814	0.122450114	0.016853215
2016-17	0	0.197609077	0	0.198259175	0.121619063	0.235843977
2012-13	0	0.11328692	0	0.127320811	-0.022371829	0.103074969
2013-14	0	0.048273177	0	0.00253132	0.598416028	0.432294384
2014-15	1	-0.232200089	-0.232200089	-0.25893018	-0.353638199	-0.105912802
2015-16	0	0.181940617	0	0.182167398	0.088218461	-0.034242199
2016-17	0	0.003971994	0	0.002606391	-0.016307109	0.01090064

Year	June Dummy	Log(Sales <sub>i,t</sub> / Sales <sub>i,t-1</sub> )	JuneDummy*Log (Sales <sub>i,t</sub> / Sales <sub>i,t-1</sub> )	Log(COGS <sub>i,t</sub> / COGS <sub>i,t-1</sub> )	Log(SG&Ai <sub>t</sub> / SG&Ai <sub>t-1</sub> )	Log(OC <sub>i,t</sub> / OC <sub>i,t-1</sub> )
2012-13	1	-0.301439922	-0.301439922	-0.319814457	-0.166467881	0.003880798
2013-14	1	-0.11374205	-0.11374205	-0.103257572	-0.092692014	-0.884088439
2016-17	1	-0.396610255	-0.396610255	-0.371003021	-0.129063142	0.852076748
2012-13	0	0.166817353	0	0.148783305	0.154388981	0.158548065
2013-14	0	0.110554698	0	0.067537099	0.209210808	0.165753625
2014-15	0	0.127108184	0	0.116756241	0.111179286	0.132849844
2015-16	0	0.19791574	0	0.13774569	0.249456585	0.226304763
2016-17	0	0.029254468	0	0.033634263	0.025089682	0.040400752
2012-13	1	-0.119768117	-0.119768117	-0.113608982	-0.118366747	-0.745762876
2015-16	1	-1.280514705	-1.280514705	-0.359595089	0.051500582	0.051500582
2016-17	0	0.074039756	0	0.052193412	0.126241609	0.158358347
2012-13	0	1.481388115	0	1.263652622	0.03780276	0.214265808
2013-14	0	0.705948065	0	0.804862113	0.119207711	0.180015088
2016-17	0	0.148575256	0	0.151273908	0.195864158	0.134863533
2012-13	0	0.057517688	0	0.069313511	-0.023777182	-0.316766632
2013-14	0	0.154915901	0	0.177058941	0.023777182	0.13573992
2014-15	0	-0.0056919	-0.0056919	-0.018964059	0.113846433	0.160473867
2015-16	0	-0.558159326	-0.558159326	-0.608626541	0.050725714	0.061774967
2016-17	0	-0.10059138	-0.10059138	-0.098969593	-0.156791488	-0.009601467
2012-13	0	0.011721804	0	-0.001938826	-0.068197905	-0.068197905
2016-17	0	0.919755832	0	0.71660962	0.830182083	1.288361114
2012-13	0	1.395182712	0	1.43371897	0.810077391	0.858279147
2013-14	0	-0.927781764	-0.927781764	-0.934566925	-0.494819611	-0.653365869
2014-15	0	-0.589847265	-0.589847265	-0.590005253	-0.044955911	-0.044642214

