

Vacation special assignment for S3 B.com
SECTOR WISE STOCK MARKET INDEX CONSTRUCTION

Guide lines

1. It is part of the assignment of Basic Numerical Skills on the topic “Index numbers”
2. It is to be submitted in handwritten form only as a continuation to your assignment.
3. The last date for submission is strictly on 2nd September 2011, Friday
4. The specific sectoral index to be prepared by different study groups of third semester b.com is as follows;
Group A: Information Technology Index
Group B: Reality Index
Group C: Oil Index
Group D: Pharma Index
5. Index should be constructed by arbitrarily selecting 10 shares from that sectors
6. The Current period for price and quantity traded is 19/08/2011 and the Base period for price and quantity traded is 19/07/2011.
7. The quantity traded is better to be expressed in lakhs and rounded off to the nearest two decimal numbers. Ie for 2535255 you can take 25.35 (lakhs)
8. The index numbers to be calculated separately under the following methods
 - a. Laspear’s Formula
 - b. Paasche’s Formula
 - c. Fischers’ Formula
9. The list of stocks under each sector can be viewed from the following link www.nseindia.com , Live Market, Index, sectoral indices, then select your sector index and get the company names.
10. The price and quantity traded for any shares on any date can be viewed from the following link www.nseindia.com ,products, equities, Historical data, security wise price volume archives, search and give the company name and give date on select time period coulumn and press get data.
11. An example illustrating the calculation of banking index is given below.
12. For more guidelines please call me at 9846070806

Vacation special assignment
Sector wise stock market index construction
Banking Index

Introduction

A stock market index measures the change in prices of shares in stock market over a period of time. It act as barometer of market movement. By looking at an index we can easily understand the pulse of the market ie whether it is going up or going down. The broader indices like Sensex or Nifty indicates the overall changes in the market. But sector specific movements can be better traced only from sectoral indices. An index can be constructed using different methods. Here we are trying to construct a banking index with current period as 19/08/2011 and base price as 19/07/2011.

Banking Index

Banking is one of the important sectors of the economy. Several micro and macro economic factors will influence the banking sector. Even though the broader market indices like Sensex or Nifty will give us a picture about the overall price level of the securities market, the real change in banking sector can be best studied only with a specific index relating banking shares alone.

The data collected from the website of national stock exchange for the calculation of banking index are summarized below.

SI. No	Company Name	Current Period = 19/08/2011		Base Period = 19/07/2011	
		Price (p1)	Quantity (q1)	Price (p0)	Quantity (q0)
1	Canara Bank	426.75	8.15	531.75	4.90
2	HDFC Bank	460.85	44.8	510.85	42.63
3	IDBI	106.25	17.99	137.05	12.79
4	Union Bank	255.65	9.56	300.05	8.33
5	State Bank of India	2037.5	28.27	2512.65	11.02
6	Punjab National Bank	991.6	3.79	1159.8	1.52
7	ICICI Bank	832.15	86.13	1061.8	18.12
8	Axis Bank	1069.60	31.93	1273.05	7.11
9	Bank of India	314.05	6.60	410.55	6.51
10	Bank of Baroda	744.45	7.18	891.45	0.91

1. Laspear's formula

Laspeyer's formula is one of the important methods of computing index under weighted aggregative Methods. Under this method, the quantities of various commodities actually produced, bought or sold in the base period are taken as weights.

$$\text{Laspeyer's Index Number} = \frac{\sum p_1 q_0}{\sum p_0 q_0} * 100$$

Here **p1** = current year price **p0** = base year price

q1= current year quantity **q0** base year quantity

2. Paasche's formula

It is another important method for computing index under weighted aggregative method. under this method the quantities of various commodities actually produced , bought or sold in the current year are taken as weights

$$\text{Paasche's Index Number} = \frac{\sum p_1 q_1}{\sum p_0 q_1} * 100$$

Where **p1** = current year price

p0 = base year price

q1= current year quantity

q0 =base year quantity

3. Fisher's Formula

It is another important method for computing index number under weighted aggregative methods. This formula is based on the price and quantities of both base year and current year.

$$\text{Fisher's Index Number} = \sqrt{\frac{\sum p_1 q_0}{\sum p_0 q_0} * \frac{\sum p_1 q_1}{\sum p_0 q_1}} * 100$$

Where **p1** = current year price

p0 = base year price

q1= current year quantity

q0 base year quantity

Solution

Sl.No	Company Name	p0	p1	q0	q1	p1q0	p0q0	p1q1	p0q1
1	Canara Bank	531.75	426.75	4.9	8.15	2091.08	2605.58	3478.01	4333.76
2	HDFC Bank	510.85	460.85	42.63	44.8	19646.04	21777.54	20646.08	22886.08
3	IDBI	137.05	106.25	12.79	17.99	1358.94	1752.87	1911.44	2465.53
4	Union Bank	300.05	255.65	8.33	9.56	2129.56	2499.42	2444.01	2868.48
5	State Bank of India	2512.65	2037.5	11.02	28.27	22453.25	27689.40	57600.13	71032.62
6	Punjab National Bank	1159.8	991.6	1.52	3.79	1507.23	1762.90	3758.16	4395.64
7	ICICI Bank	1061.8	832.15	18.12	86.13	15078.56	19239.82	71673.08	91452.83
8	Axis Bank	1273.05	1069.6	7.11	31.93	7604.86	9051.39	34152.33	40648.49
9	Bank of India	410.55	314.05	6.51	6.6	2044.47	2672.68	2072.73	2709.63
10	Bank of Baroda	891.45	744.45	0.91	7.18	677.45	811.22	5345.15	6400.61
					Σ	74591.42	89862.80	203081.12	249193.67

Calculation of Bank Index under Laspeyer's method

$$\begin{aligned}\text{Laspeyer's Index Number} &= \frac{\sum p_1 q_0}{\sum p_0 q_0} * 100 \\ &= \frac{74591.45}{89862.80} * 100 \\ &= 0.83 * 100 \\ &= \mathbf{83.00}\end{aligned}$$

Conclusion

It means that Rs 100 invested in banking stock on 19/07/2011 is worth only Rs 83 as on 19/08/2011. It indicates that banking stock have fallen in prices during this period. The exact loss is 17%.

Calculation of bank index under Paasche's Method

$$\begin{aligned}\text{Paasche's Index Number} &= \frac{\sum p_1 q_1}{\sum p_0 q_1} * 100 \\ &= \frac{203081.12}{249193.67} * 100 \\ &= 0.8150 * 100 \\ &= \mathbf{81.50}\end{aligned}$$

Conclusion

It means that Rs 100 invested in banking stock on 19/07/2011 is worth only Rs 81.5 as on 19/08/2011. It indicates that banking stock have fallen in prices during this period. The exact loss is 18.5%.

Calculation of banking index under Fisher's Method

$$\begin{aligned}\text{Fisher's Index Number} &= \sqrt{\frac{\sum p_1 q_0}{\sum p_0 q_0} * \frac{\sum p_1 q_1}{\sum p_0 q_1}} * 100 \\ &= \sqrt{\frac{74591.45}{89862.80} * \frac{203081.12}{249193.67}} * 100 \\ &= \sqrt{0.83 * 0.8150} * 100 \\ &= \sqrt{0.6765} * 100 \\ &= 0.8225 * 100 \\ &= \mathbf{82.25}\end{aligned}$$

Conclusion

It means that Rs 100 invested in banking stock on 19/07/2011 is worth only Rs 82.25 as on 19/08/2011. It indicates that banking stock have fallen in prices during this period. The exact loss is 17.75%.

Conclusion

From this assignment I understood the calculation and used of index numbers from the practical point of view. Index numbers are used to measure the changes in a group of variables.