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HOW TO USE INDEX IN VALUATION

Recap

Index is calculated across similar assets, in a way that it represents an over all dynamics of the market. For example Nifty 50 is an index of 50 shares of National Stock Exchange, and that represents how the over all market moves.

In Bharat, WSI, or whole sale price index is the key index that has over 700 items. The weightage of these items change with the usage in the society. Many items are added and some are deleted as well the weight of these items also changes.

The present structure of the WSI is as follows..

| Item Main Group | Percentage |
|--------------------------|------------|
| All Commodities | 100% |
| 1. Primary Articles | 22.6% |
| 2. Fuel & Power | 13.2% |
| 3. Manufactured Products | 64.2% |
| Food related | 24.4% |

Details of Present Series.

| Name | Sub Name | Weight Name | Weight Sub Name | Number of item Names | Number of Items Sub Name |
|-----------------------|-------------------------------|-------------|-----------------|----------------------|--------------------------|
| Primary Articles | | 22.6156 | | | |
| | Food Articles | | 15.25585 | | 77 |
| | Non Food Articles | | 4.11894 | | 28 |
| | Minerals | | 0.83317 | | 11 |
| | Crude Petroleum & Natural Gas | | 2.40960 | | 2 |
| Fuel & Power | | 13.15190 | | | |
| | Coal | | 2.13813 | | 5 |
| | Mineral Oils | | 7.94968 | | 10 |
| | Electricity | | 3.06409 | | 1 |
| Manufactured Products | | 64.23054 | | | |
| | Mfg of food products | | 9.12173 | | 60 |
| | Mfg of Bevreges | | 0.90907 | | 7 |
| | Mfg of Tobacco products | | 0.51357 | | 3 |
| | Mfg of Textiles | | 4.88068 | | 25 |

| Name | Sub Name | Weight Name | Weight Sub Name | Number of item Names | Number of Items Sub Name |
|-----------------------|---|-------------|-----------------|----------------------|--------------------------|
| Manufactured Products | | | | | |
| | Mfg of wearing Apparel | | 0.81414 | | 8 |
| | Mfg of leather & related products | | 0.53540 | | 11 |
| | Mfg of wood, it's product and cork | | 0.77181 | | 10 |
| | Mfg of paper & paper products | | 1.11322 | | 20 |
| | Printing & reproduction of recorded media | | 0.67622 | | 7 |
| | Mfg of Chemical & Chemical Products | | 6.46505 | | 76 |
| | Mfg of Pharma, medicinal chemical, botanical products | | 1.99345 | | 23 |
| | Mfg of rubber & plastics products | | 2.29851 | | 38 |
| | Mfg of other non metallic mineral products | | 3.20176 | | 26 |
| | Mfg of Base Metals | | 9.64632 | | 41 |
| | Mfg of metal products except machinery & equipment | | 3.15498 | | 27 |

| Name | Sub Name | Weight Name | Weight Sub Name | Number of item Names | Number of Items Sub Name |
|-----------------------|---|-------------|-----------------|----------------------|--------------------------|
| Manufactured Products | | | | | |
| | Mfg of computers, electronic & optical products | | 2.00875 | | 18 |
| | Mfg of Electrical equipment | | 2.92970 | | 48 |
| | Mfg of Machinery & Equipment | | 4.78899 | | 60 |
| | Mfg of motor vehicle , trailer & semi trailer | | 4.96853 | | 24 |
| | Mfg of other transport equipment | | 1.64777 | | 11 |
| | Mfg of furniture | | 0.72672 | | 6 |
| | Other Manufacturing | | 1.06417 | | 13 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Looking in the details above we see that WSI is very comprehensive.

How is index used in valuation.

Index is used in ONLY Cost Approach.

Cost approach as we know, we have to get the Replacement Cost New (RCN). That is the present cost of replacement of the item that is to be valued. However we face several problems. These are..

- Supplier may not exist.
- Same machine may not be manufactured today.
- Technology has changed
- Others.

In Valuation we have to get as much similar asset as we are valuing. So these problems limit our data gathering.

This becomes even more difficult, when the assets were purchased from international suppliers.

This is where the index comes in our help.

The standard formula used is

$\text{Price/ Cost Now} = \text{Index Now} \times (\text{price / cost at the time of purchase}) / \text{Index at that time}.$

Example.. We have to get the RCN for a machine. That was purchased in March 2013 at Rs. 12.33 Lakhs.

To get the present RCN, let us get the data.

Index for machines in Feb – 2025 = 131.2

Same index in March -2013 = 105.0

So RCN Now will be = $12.33 \times 131.2 / 105 = \text{Rs. 15.41 lakh}.$

Questions that arise ...

1. How to get the data.





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Wholesale Price Index (WPI) ▾

Eight C

Growth (in percentage)



WPI Press Release

WPI Download Data ▸

WPI Series (2011-12) ▸

Metadata (2011-12)

WPI Press Release Archive

Advance Release Calander (ARC)

From here one can get the data on a monthly basis from 1951 to present. As this data is updated regularly, one can download the data on the regular basis.

It is a good idea to download the data – and go through it to understand and see how to use it. One can use just the relevant data.

| | A | EX | EY | EZ | FA | FB | FC | FD |
|----|--|--------------|--------------|--------------|--------------|------------|--------------|----|
| 1 | Base 2011-12 | | | | | | | |
| 2 | COMM_NAME | INDX0920 | INDX1020 | INDX1120 | INDX1220 | INDX0120 | INDX022025 | |
| 19 | g. Manufacture of other electrical equipment | 123.2 | 123.8 | 124.8 | 125 | 124.7 | 124.8 | |
| 20 | Electric welding machine | 109 | 108 | 109.6 | 110.1 | 109 | 109.2 | |
| 21 | Motors & other DC equipment | 127.9 | 130.2 | 133.7 | 133.9 | 133.9 | 133.9 | |
| 22 | Insulator | 129.5 | 130.5 | 130.5 | 130.5 | 130.4 | 130.6 | |
| 23 | (R). MANUFACTURE OF MACHINERY AND EQUIPMENT | 130.9 | 130.8 | 130.5 | 130.5 | 131 | 131.2 | |
| 24 | a. Manufacture of engines and turbines, except aircraft, vehicle and two wheeler eng | 133.2 | 133.9 | 133.6 | 132.5 | 133.3 | 134.5 | |
| 25 | Steam Turbines | 83 | 83 | 83 | 83 | 83 | 83 | |
| 26 | Industrial valve | 135.2 | 136 | 135.7 | 134.5 | 135.4 | 136.6 | |
| 27 | b. Manufacture of fluid power equipment | 133.8 | 134.1 | 134.6 | 134.9 | 135.6 | 135.7 | |
| 28 | Injection pump | 136.2 | 136.8 | 136.9 | 137 | 137 | 136.8 | |
| 29 | Hydraulic pump | 134.2 | 134.2 | 133.9 | 134.7 | 134.2 | 133.8 | |
| 30 | Pneumatic tools | 118.8 | 118.8 | 118.8 | 118.8 | 118.8 | 118.8 | |
| 31 | Water pump | 140.2 | 140.4 | 141.6 | 142 | 143.6 | 144 | |
| 32 | c. Manufacture of other pumps, compressors, taps and valves | 118.5 | 118.4 | 118.7 | 118.9 | 118.8 | 119 | |
| 33 | Centrifugal Pumps | 142 | 141.7 | 141.5 | 141.7 | 142.5 | 143.3 | |

Here for P&M, I use the over all MANUFACTURE OF MACHINE AND EQUIPMENT – index. That has been high lighted as well.

Some points to remember..

The base of the index usually is changed every 10 year. So the first series will be from 1951 base. That means every line item is put as 100. And the price as it changes every month is calculated and updated.

Now every 10 year the over all WSI is expanded. More items are added. Weight of many items are also reduced. These are done to reflect the present economic situation.

For example, now services and manufacturing contributes more to the economy than agriculture. So the overall weight of the agriculture is reduced.

When ever these changes take place – the NEW series starts with 100. That does not mean old data is lost or become non relevant.

To convert the old data that can be used with the present – there is a conversion factor that is also used.

With these conversion factors one can get the data that is relevant even for today.

Example..

A company sold a major machine, in 2022. The original was purchased in 1975. The machine is working profitably.

If we go with the depreciation schedule, that will be just 5% of the original value. That value will be even less than the scrap that one can get. But as the machine is working there is a major economic value.

How to do is.. Index in 1975 is taken.

From 1975 to present – there are 4 base changes. These are 1981, 1991, 2001 & 2011.

There are conversion factors for each series when it starts fresh.

These are 1981 = 2.74

1993-94 = 2.45

2004-05 = 1.87

2011-12 = 1.85

For present – we will have to use the following formula.

Convert Index to Base 1971 = Multiply factors = $2.74 \times 2.45 \times 1.87 \times 1.85 = 23.223$

An Index of 131 in Jan 2025 – will be $23.223 \times 131 = 3042$.

So, we take the index value of 1975. That is the base index. And the present index will be 3042, as that will be equivalent and comparable to the index at that time.

Let us also take another case.

Asset was purchased from Germany in 1989. How do we handle those. The steps will be as follows..

1. Get the ORIGINAL FOB price of the asset at the time of purchase.

2. Use the German relevant index to get the Euro price as of now.

3. Get the logistics cost.

4. Get the INR / EUR conversion

5. Get the duties and other taxes of import.

Using all the above we can get the RCN cost.

It is interesting to see that we are using currency conversion, use the manufacturing country index. Use present taxes.

So these are the right ways to do the valuation.

These methods are also accepted by SEBI, Ministry and other regulators.

Thanks for reading. This is a difficult topic and I hope I have been able to make it easy enough to make every one understand.

