Research by, Ritesh Patel
riteshpatel@wavesresearch.com

Did you know How IIP is calculated & its implication of Stock Markets?

We must have heard the term IIP data/numbers on news channels, from many of the investors, traders, and must have seen on newspapers, but most of the people just concerned about the number i.e. IIP data came out to say 1% and expectation was 1.5%, but do we actually know what is it and how it affects our financial market?
In this article, we will try to give brief explanation on IIP data/number on following topics.

1. What is IIP
2. When it is published
3. Calculation of IIP number
4. Case study of recent IIP number (published on 12-09-2013)
5. Effect of IIP number on the financial markets

Combining study of technical analysis with IIP numbers

What is IIP?

IIP is a short term indicator which **measures the changes in the production of an economy**; which has no impact on changes in prices. The all India IIP is a composite indicator that measures the short-term changes in the volume of production of a basket/portfolio of industrial products during a given period, relative to its chosen base period.

For example,
If I want to compute change in electricity production in an economy for the month of July 2013, I'll take July 2012 as a base period to compare, which will be called year on year basis.

They are segregated into 3 sections: manufacturing, mining and electricity. (with 2004-2005 as base)

Sl. No.	Sector	No. of items	No. of item groups	Weight
1	Mining	61	1	141.57
2	Manufacturing	620	397	755.27
3	Electricity	1	1	103.16
4	Total	682	399	1000

Source: mospi.nic.in

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riteshpatel@wavesresearch.com

They are also classified on the basis of usage: capital goods, basic goods, non-basic goods, consumer durables and consumer non-durables.

Sl. No.	Use-based category	No. of item groups	Weight
1	Basic goods	88	456.82
2	Capital goods	73	88.25
3	Intermediate goods	106	156.86
4	Consumer goods	132	298.08
4(i)	Consumer durables	43	84.60
4(ii)	Consumer non-durables	89	213.47

Source: mospi.nic.in

Used Based Bifurcation (More Detailed Bifurcation)

Category	Details	Examples	Allocation
Basic Goods	Any bulk raw material/product used for further production of new items in manufacturing and agriculture	High Speed Diesel, Aviation Fuel, Kerosene, Urea, Cement all kinds, Granites, Sponge iron, Copper & Copper Products and Electricity.	456.82
Capital Goods	Plants, machinery and goods used for further investments	Refractory Bricks, Boilers, Air & Gas Compressors, Engines including Internal Combustion and Diesel Engine, Tractors (complete), Transformers, Commercial Vehicles and all machineries like Textile Machinery, Printing Machinery etc.	88.25
Intermediate Goods	Any good/product produced as incomplete product or which goes as input in production for further finishing	Cotton yarn, Plywood, Corrugated and other paper boxes, Liquidified Petroleum Gas, Adhesives, Aluminium Tubes/Pipes, Steel Structures, Fasteners etc.	156.86
Consumer durable	Products directly used by consumers and having a larger durability (more than 2/3 years)	Pressure Cooker, Air Conditioner (Room), Tyre, Car/Cab, Glazed Tiles /Ceramic Tiles, Telephone Instruments including mobile phone and accessories, Colour TV Sets, Passenger Cars, Motor Cycles, Gems and Jewellery etc.	84.6
Consumer non-durable	Products that are directly used by consumers and can't be preserved for long periods	Fruit Pulp, Edible Hydrogenated Oil, Soyabean oil, Milk - skimmed/ pasteurized, Milk Powder, Maida, Rice, Biscuits, Sugar(including sugar cubes), Tea, Cigarettes, Apparels, Newspapers, Antibiotics & it's preparations etc.	213.47

Source: mospi.nic.in

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When it is published?

It is compiled and published monthly by the Central Statistics Office (CSO) with the time **lag of six weeks** from the reference month.

For example,

If I want to compute IIP data for the month of July 2013, so the reference month would be July 2013, and it will be published after six weeks, which is on second week of September 2013.

It is published every month, because if they calculate every year, it'll be too late for the Government or RBI to make necessary amendments in the policy! They've to keep a constant eye on this number. For example

1. Automobile sector is facing very negative growth; Government may give them tax-holidays or allow them to import foreign machinery without paying import tax. [Fiscal Policy]
2. Negative IIP may mean less liquidity in the system where there is shrinkage in demand and hence industry had to reduce the production or Businessman are having hard time borrowing because of high interest rates. = Change the repo, reverse repo CRR etc to increase money supply in people's hands. [Monetary Policy]

Calculation of July 2013 IIP numbers

Year on year basis: Let's look at below table and analyze how we say IIP is 2.6% Y-O-Y & Manufacturing has rise by 3.0 Y-O-Y basis, etc, etc…

Month	Mining (141.57)		Manufacturing (755.27)		Electricity (103.16)		General (1000.00)	
	2012-2013	2013-2014	2012-2013	2013-2014	2012-2013	2013-2014	2012-2013	2013-2014
Apr	124.8	120.5	173.0	176.1	152.7	159.1	164.1	166.5
May	130.0	122.3	179.0	172.6	162.3	172.4	170.3	165.5
Jun	122.1	116.8	178.1	175.1	157.0	157.0	168.0	165.0
Jul*	119.7	117.0	177.4	182.7	156.3	164.5	167.1	171.5
Aug	114.6		175.8		152.2		164.7	
Sep	111.2		174.6		149.7		163.1	
Oct	122.4		182.4		160.5		171.6	
Nov	121.7		176.4		149.1		165.8	
Dec	132.5		191.1		157.6		179.3	
Jan	135.5		193.6		160.7		182.0	
Feb	124.6		190.8		140.5		176.2	
Mar	146.4		207.3		164.2		194.2	

Source: mospi.nic.in

Let's look at the "July" row from the column "General". When we subtract the current year's number with previous year's number i.e. 171.5-167.1 we will get 4.4, which is the change in production in absolute term. When we divide this number 4.4 with 167.1 and then multiply that number with 100 we will get 2.6 % which is in percentage term.

Same we can do for manufacturing as well. Subtract the current year's number with previous year's i.e. (182.7-177.4) = 5.3 divide this number with 177.4 and multiply with 100, we will get our number 3 %

Same we can do for mining as well as for electricity.

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Cumulative Year on Year basis: Cumulative year on year is nothing but the IIP number of the current year till the latest month where same period last year is a base period.

Let's look at above table and analyze how we say cumulative IIP is -0.2% Y-O-Y & cumulative Manufacturing has raise by -0.2 % cumulative Y-O-Y basis, etc, etc…

Step 1: Take the average of 2013-2014 general column. (166.5+165.5+165+171.5)/4 = 167.1

Step 2: do the same exercise for previous year. (164.1+170.3+168+167.1)/4 = 167.4

Step 3: take the difference (167.1-167.4) = -0.3

Step 4: divide this number with the number from step 2 and multiply it with 100. (-0.3/167.375)*100 = -0.2

*some rounding error has occur

Same we can do for manufacturing as well. Take the average of 2013-2014 i.e. 176.6, take the average of 2012-2013 i.e.176.9 now subtract 176.6-176.9 = -0.3 now divide -0.3/176.6 and multiply with 100 which comes to -0.2
*some rounding error has occur

Above table was sectoral bifurcation. In the same way one can imagine use Based Bifurcation.

Month	Basic goods (456.82)		Capital goods (88.25)		Intermediate goods (156.86)	
	2012-2013	2013-2014	2012-2013	2013-2014	2012-2013	2013-2014
Apr	148.0	150.1	207.9	207.3	141.8	145.3
May	155.9	154.5	227.3	221.4	148.6	150.1
Jun	151.2	148.9	235.0	221.3	145.4	147.3
Jul*	150.6	153.1	234.0	270.6	146.3	149.8
Aug	149.0		250.0		146.4	
Sep	144.0		248.7		142.1	
Oct	153.7		241.1		146.7	
Nov	149.6		235.4		139.4	
Dec	160.1		260.7		149.4	
Jan	162.7		250.5		151.7	
Feb	150.2		285.5		144.3	
Mar	168.6		343.2		158.3	

Month	Consumer goods (298.08)		Consumer durables (84.60)		Consumer non-durables (213.47)	
	2011-2012	2012-2013	2011-2012	2012-2013	2011-2012	2012-2013
Apr	187.5	190.6	306.2	276.8	140.5	156.4
May	187.1	173.9	310.1	253.0	138.3	142.5
Jun	185.8	182.3	307.2	275.1	137.7	145.5
Jul*	183.3	181.7	307.0	278.4	134.3	143.4
Aug	173.3		280.7		130.7	
Sep	177.8		303.9		127.8	
Oct	191.7		336.2		134.5	
Nov	184.2		301.1		137.8	
Dec	200.6		273.9		171.5	
Jan	207.2		285.4		176.2	
Feb	200.7		289.7		165.4	
Mar	208.4		311.2		167.6	

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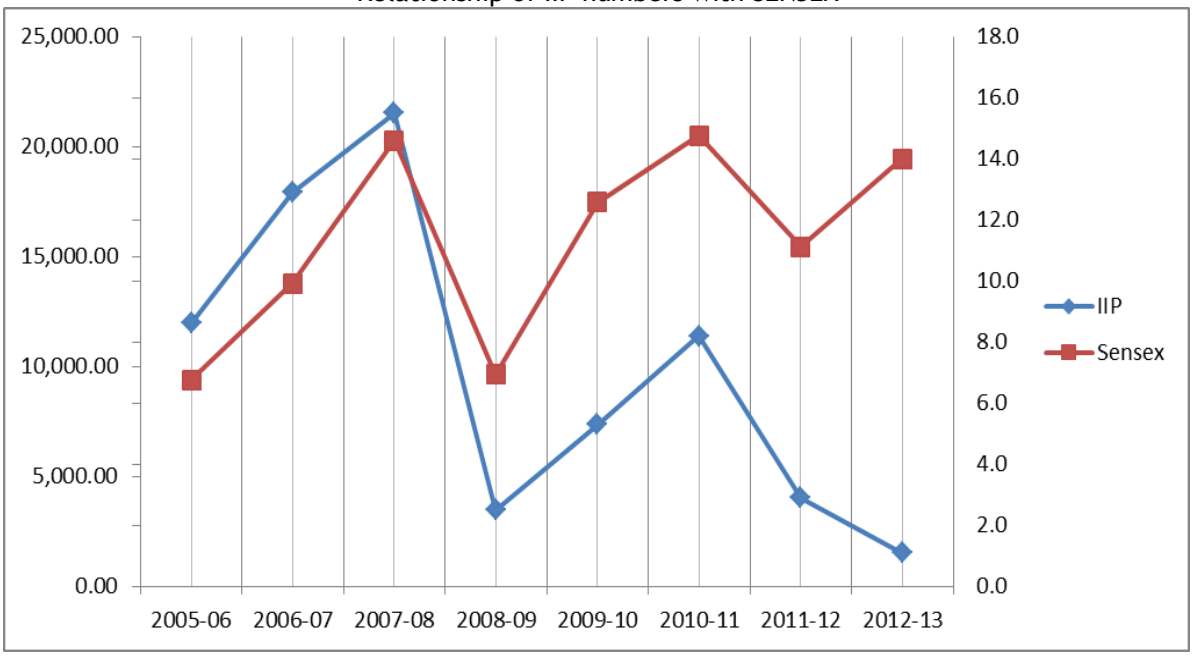
Effect of IIP number on the financial markets (SENSEX)

Relationship of IIP numbers with SENSEX



The chart given above shows the movement of Sensex and IIP over the last 8 years. It is quite evident that the IIP and Sensex movement is closely related. The IIP data is not as volatile as the Sensex but even a 2-3% change in IIP can lead to a lot of swing in stock market movement. There are many other factors that impact the stock market, but IIP gives a good indication of where it is headed. Consider for example the period 2010-11. The rise in IIP during this period has been reflected in the upward movement which saw Sensex touching 20,000 in that year. **Thus, IIP can drive the stock market up or down. But how does IIP actually affect the stock markets and subsequently the economy.**

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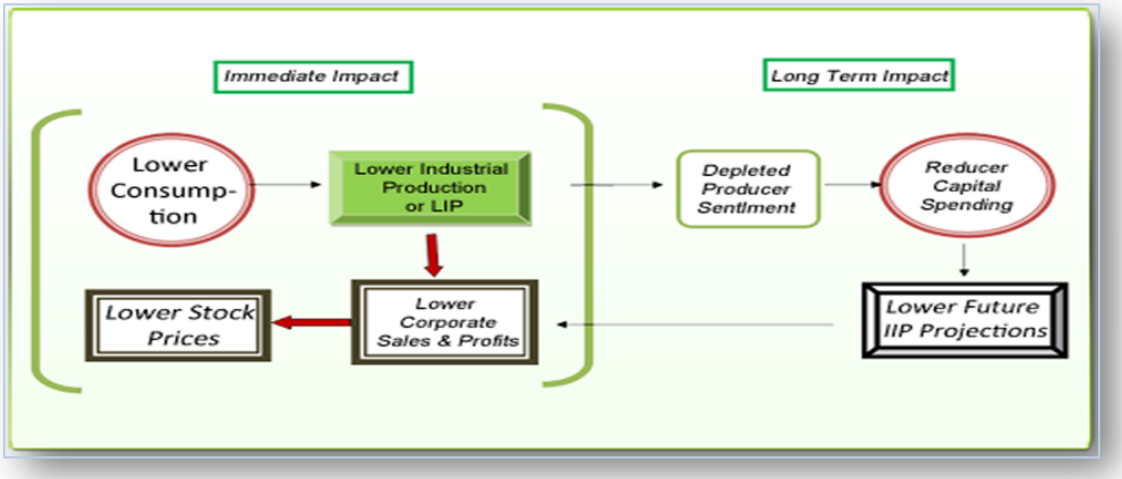
The relationship between the IIP and the stock market is backed by a whole chain of events. Consumer spending is indicative of the demand in the economy. IIP, on the other hand, indicates the total production in the economy and is **the other side of the coin i.e. the Supply side.**



Depleted consumer sentiment leads to a fall in consumer spending consequently leading to lower demand in the economy. If we are not buying more then why would companies produce more!! This leads to lower growth or sometimes even a de-growth in IIP. Thus, usually the immediate impact of poor IIP figures is falling stock prices.
The best way to analyze the IIP figure is to look at the various industries and their **technical formations**. Manufacturing sector contributes approx. 80% to the IIP that is why it has the most impact on stock market. You might hear that IIP recorded good growth of 10.8% in Oct. 2010, but the story may not be the same for every industry. Let us look which industries we need to look at to completely understand the IIP figure.

1. Chemical & Related Products
2. Automobiles
3. Cement Sector
4. Mining Sector

The IIP does not include growth of banking sector. However increase in production & investment activity is usually financed through borrowings from banks. So, if industrial production & capital spending is increasing then it is likely to have a positive impact on the banking sector.

Study of IIP numbers alone will not help you to benefit from the market. Because there are possibilities that market will fall after positive IIP data. From here Technical analysis come into picture to gain in this situation.

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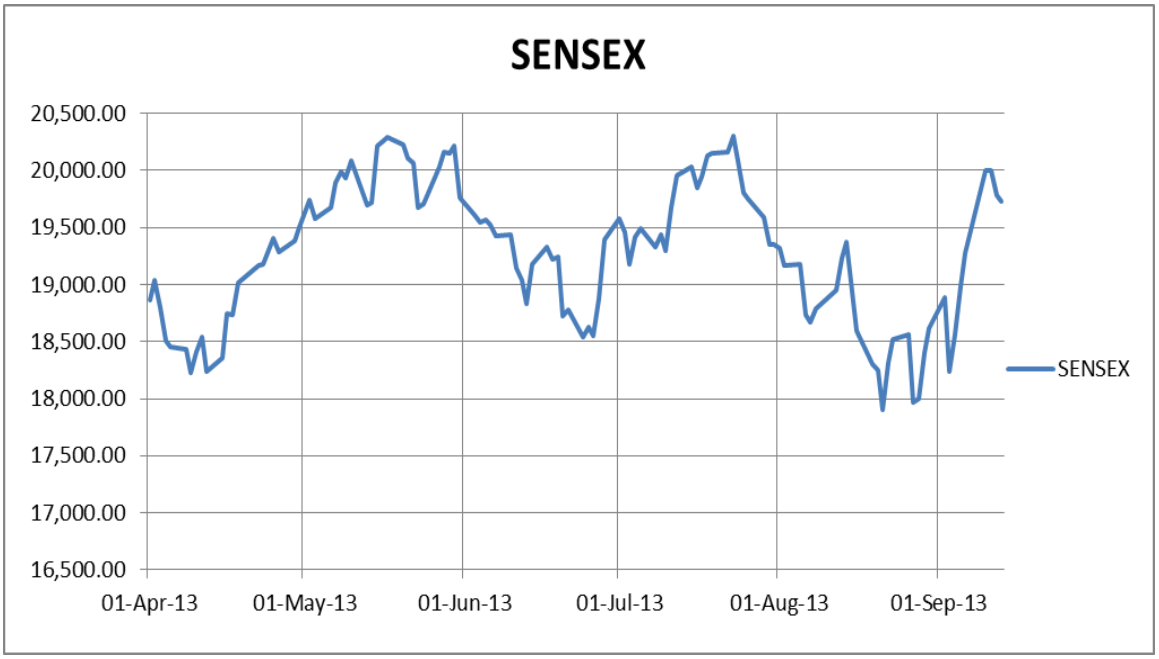
Now look at what happened in this financial year 2013-14



April 2013 IIP data came at +2.2 % on June 2013, but despite of positive number Sensex was considerably falling after June! Showing inverse relationship

May 2013 IIP data came at -1.6% on July 2013, as can see Sensex was rising from there, even after poor IIP number! Showing inverse relationship

June 2013 IIP data at -2.8% on August 2013 and Sensex fell from there. Positive relationship

July 2013 IIP data at +2.63% on September 2013 Sensex rallied till now but what next?

Why does this inverse relationship???

When April 2013 data came, as we can see from above chart, Sensex have already discounted that positive news in prices by rallying in the previous month. Same logic we may use for May 2013 data.

But when we combine study of technical analysis with IIP numbers, we may be in a better position to judge whether market has the potential to absorb positive news or not.

Now let's look at How to combine IIP numbers with market with the help of technical analysis.

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First step would be to identify which sectors have contributed the highest growth in IIP data.

Now find the companies which fall in this sector.

And last but not the least within those companies, which company's charts are comparatively better.

If you correctly identify those companies with given checklist, your chances to correlate IIP numbers with market will be inline.

Now in this July IIP numbers, Capital goods have contributed 15.6% growth YOY basis from used base category. Similarly electricity sector have contributed 5.2% growth and manufacturing sector have contributed 3% growth.

As per our views, from capital goods, following companies may perform well in upcoming period.

1. **LARSEN & TOUBRO LTD DAILY CHART**

From above chart, we can see that momentum indicator RSI, have made positive divergence on daily chart, which have been confirmed by prices by breaking the down trend line. We may expect LNT prices to outperform in short term amongst capital goods sector.

Some more companies which may perform well.

2. BHARAT HEAVY ELECTRICALS LTD
3. SIEMENS LTD
4. ABB LTD.

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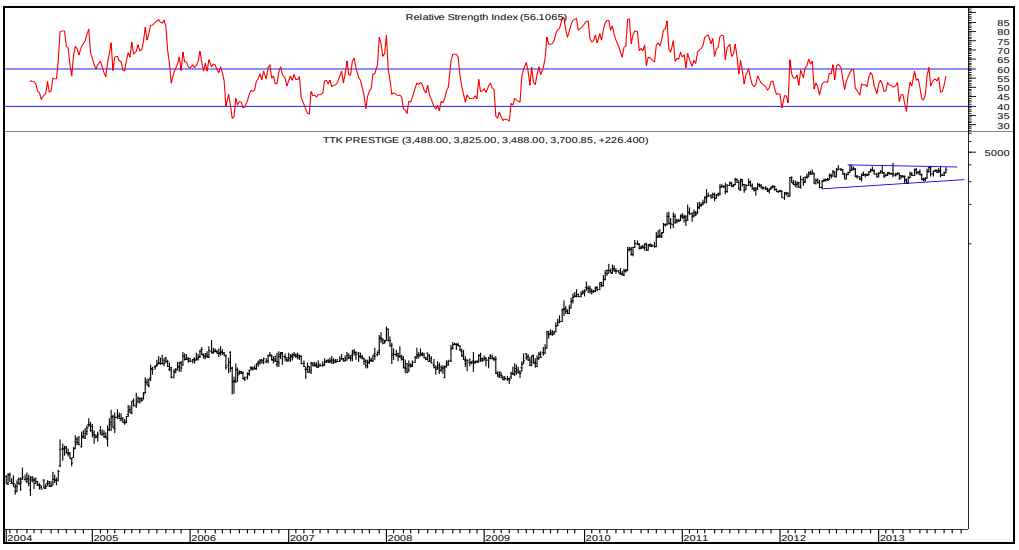
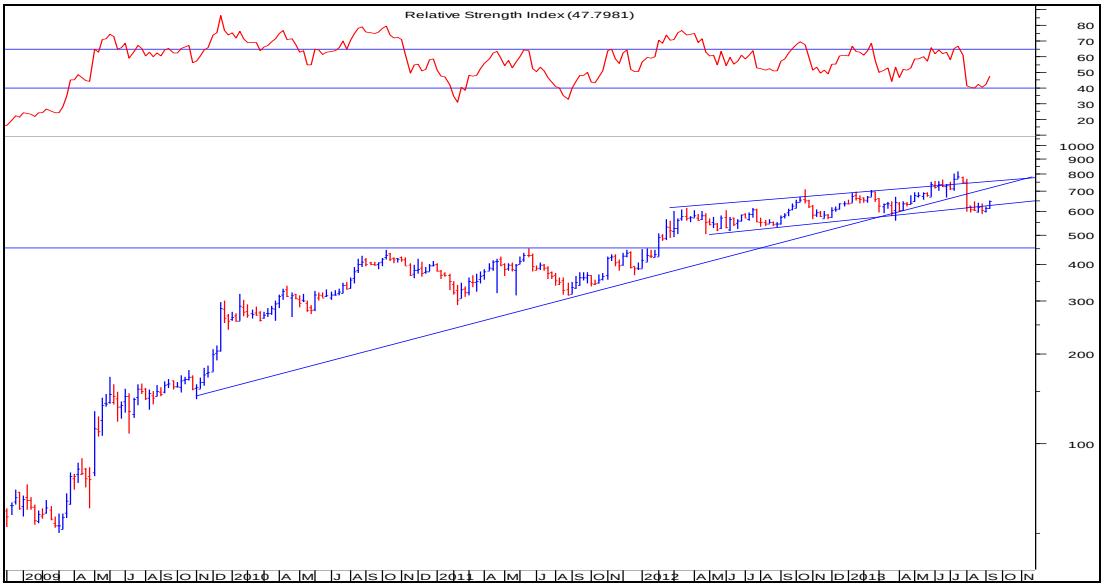
As per our views, from manufacturing sector, following companies may perform well in upcoming period.

1. **TTK prestige (domestic appliances) weekly chart**



TTK prestige, from past few years is outperforming company in our markets. However, prices are trading in a sideways consolidation (in a resting phase). We expect this outperformance to continue further.

2. **Havells (Electric equipments) weekly chart**



Havells prices are trading in an uptrend from past few years, where prices are taking support near up trend line. However, from past few weeks prices are trading in a channel, where prices are taking support near lower range of the channel. We expect Havells prices to test higher levels as momentum indicator has taken support near 40 levels.

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