INDIAN INSTITUTE OF MANAGEMENT

CALCUTTA

INDIAN INSTITUTE OF MANAGEMENT CALCUTTA

Financial Research & Trading Laboratory

Financial Research & Trading Laboratory

a₹tha

A NEWSLETTER OF THE FINANCE LAB

Indian Institute of Management Calcutta

Contents

Editorial

The Goods and Services Tax (GST), a single window indirect taxation system, in India will become a reality very soon. While some political parties, opposed to the Government at the Centre, claim that GST would lead to more hardship to the end con summers, many experts believe that business would pass on the benefits of GST ultimately to consumers. Actual data after GST is implemented would only show which opinion was correct. It is heartening to note that the GST would allow input tax credit for inter-state transactions as well as on capital goods. Another important issue that has drawn greater attention of the regulators in the recent past is resolution of bad loans. Estimates show that Indian banks are saddles with Rs.10 trillion bad loans in their books. RBI in the current month (May 2017) has expanded the scope of the oversight committee on bad loan resolution and has also offered a larger role for credit rating agencies. Government of India has also moved an ordinance this month empowering RBI to intervene directly in stressed assets cases. It is expected that active monitoring by RBI would arrest further loans turning bad.

The first piece shows that managing earnings is not a monopoly of listed companies. The study uses a list of six variables to estimate a comprehensive earnings management score and provide insights into the relationship between earnings management and shareholding pattern. Further it shows that financially stressed firms resort to greater level of earnings management. In the second article, the author analyses the new IIP series which was launched with the Base Year 2011-12 and explains why the trends in old & new IIP series diverge significantly from December 2015.

The Market Watch section in this issue highlights the Bull Run and Parity in Euro.

You may send your comments and feedback on this issue to ashok@iimcal.ac.in.

Happy reading!

Ashok Banerjee

Developing a Comprehensive Earnings Management Score (EMS)

Ashok Banerjee[1], Jayanta Mandi[2] and Deep N Mukherjee[3]

[1]Ashok Banerjee, Ph.D., is Professor, Finance and Control, Indian Institute of Management Calcutta (IIM-C). He is also the faculty in-charge of the Financial Research and Trading Lab at IIM-C. His primary research interests are in areas of Financial Time Series, News Analytics and Mergers & Acquisitions.

[2]PGDBA, IIM Calcutta

[3] Deep N Mukherjee is currently Chief Product Officer, handling product design and analytics in a Indian credit bureau.

It is believed that capital markets do not like (earning) surprise and hence companies systematically resort to earnings management practices to smoothen the effect of 'surprise'. The regulatory requirements for publication of quarterly financial results have made management of firms myopic resulting in supposedly greater earnings management. While the intention of the regulator in seeking frequent financial information from listed firms was to protect investors, markets have become increasingly unforgiving of companies that miss their estimates. For example, annual earnings (profits) of Dr. Reddy's Laboratories Ltd. (DRL) for 2016-17 was reported on 12 May 2017 at Rs. 72.61 compared to an estimate of Rs. 82.88 for the same period-, resulting in an earnings surprise of -12.4%. Market reaction was severe- the share price tumbled from Rs. 3097 in early February 2017 to Rs. 2414 on 26 May 2017- a fall of 22%. This kind of market reaction may create undue pressure on the management to 'perform'. A popular way to avoid such severe market reaction is to manage earnings in such a way that the earnings surprise is limited and at the same time disclosures are within regulatory limits. But why should an unlisted company manage earnings? There is no 'market' expectations that need to be managed for unlisted firms. The possible reasons could be institutional ownership and leverage. A study[1] finds that firms with higher institutional holdings report better earnings quality. Foreign institutional ownership also has a negative relationship with the degree of earnings management by firms, the study reports. Another study[2] looks at the relationship between the level of corporate governance and earnings management of firms. Using a sample of 2315 non-financial listed companies, the study finds a negative association between corporate governance attributes and earnings management. The study also observes that the relationship between institutional investors

---

[1] Institutional Ownership and Earnings Management in India, Ravitha Ajay, R. Madhumathi. Indian Journal of Corporate Governance, Vol 8 Isue 2 pp 119-136

[2] Exploring the Relation between Earnings Management and Corporate Governance Characteristics in the Indian Context, Jaiswall Manju, Ashok Banerjee. Corporate Governance in India. A report by the Indian Institute of Corporate Affairs , Thought Arbitrage Research Institute and Indian Institute of Management Calcutta

and earnings management indicated existence of a 'short horizon' problem. Firms with higher leverage have tendency to manage earnings to 'delay' any bad news to the lenders. Our study finds that managing earnings is not a monopoly of listed companies.

Experts believe that accrual basis of accounting is the source of earnings management. Historically, accountants have argued that accrual based of financial reporting enables the firm to recognize the timing of cash flows in sync with its performance, inclusion of accruals in earnings presents a more accurate portrayal of firms' economic performance. However, accrual basis of accounting allows managers of a firm grater 'discretion' in reporting financial elements in the financial statements. While managers resort to income increasing or decreasing earnings management to minimize 'shock' or reduce cost of capital, any news of earnings management result in adverse consequences for investors. Regulators are, therefore, worried about this practice. For example, the Securities and Exchange Commission (SEC) of USA periodically reviews companies' filings and monitors compliance with regulatory disclosure and accounting requirements. Similar practices are also followed by SEBI in India. However, whether such regulatory oversight improves earnings quality (i.e., reduces earnings management) of firms is an open question. Empirical evidence in this regard are mixed.

In 2013, SEBI released a study by its Development Research Group on earnings management[3] which examines and quantifies the extent of earnings management in India. The study looked at a cohort of 2229 listed Indian (non-financial) companies during 2008-11. The study finds that average earnings management in Indian corporate sector was 2.9% of total assets. The study also finds that small firms indulge in greater earnings management (around 10% of total assets).

Measuring Earnings Management

Earnings management ranges from 'manipulation to opportunism'. Earnings management refers to adjustment of financial reporting numbers for managerial self-interests. Technically speaking earnings management is not illegal as the accounting principle provides the firm management to use their discretion and judgment in financial reporting. The research on accrual management focuses on separating managed accruals from normal accruals. It is not easy to identify the managed accruals. Elgers, Pfeiffer and Porter[4] mention that a 'fundamental issue in assessing earnings management is the un-observability of the managed and un-managed components of reported earnings'. The part of the accrual normal to an industry is called non-discretionary component of accrual. Discretionary accrual refers to the difference of actual accrual and non-discretionary accrual. The use of

---

[3] Earnings Management in India, SEBI DRG Study 2013 (http://www.sebi.gov.in/sebi_data/DRG_Study/EMiM.pdf accessed on 30 May 2017)

[4] Anticipatory income smoothing: a re-examination. Elgers, P.T., Pfeiffer, R.J. and Porter, S.L. 2003, Journal of Accounting and Economics, 35(3), pp.405-422

discretionary accrual as a measure of earnings quality is widespread in the literature. We briefly describe the methodology of earnings management.

Formally accrual can be defined as difference between accrual earnings and cash earnings. In the absence of accrual earnings both types of earnings would result in same figure. Cash earnings can be stated as

$$\text{cash earnings}_t = \text{change in cash}_t - \text{change in debt}_t + \text{net cash distributions to equity}_t$$

On the other hand, the accrual based earnings can be stated as,

$$\text{accrual earnings}_t = \text{change in owner's equity}_t + \text{net cash distributions to equity}_t$$

One can express accrual as

$$TACC_t = total\ accrual_t = change\ in\ net\ operating\ asset_t$$
$$net\ operating\ asset_t = (total\ asset - financial\ asset)_t - (total\ liability - finiacial\ liablity)_t$$
$$TACC_t = \text{change in assets}_t - \text{change in liability}_t + \text{change in debt}_t - \text{change in cash}_t$$

This is the expression used in the present study to calculate balance sheet accrual (BS accrual).

Moreover, Hribar and Collins[5] point out that BS accrual is vulnerable to non-articulation events. They define non-articulation events as non-operating events such as divestiture, mergers and acquisitions and foreign currency translations. They show that mergers and acquisitions have positive bias whereas divestiture and discontinued operation have negative bias in BS accrual. Thus they recommend measuring total accrual directly from cash flow statement. Following their methodology we calculate CF accrual as:

$$TACC_t = EXBI_t - CFO_t$$

$TACC_t$:total accrual by cash flow method

$EXBI_t$:earnings before extraordinary items and discontinued operation

CFO_t:operating cash flow

To estimate discretionary accrual first we have to estimate non-discretionary accrual component and then subtract the non-discretionary part from total accrual to obtain discretionary accrual. The non-discretionary accrual is

---

[5] Errors in estimating accruals: Implications for empirical research, Hribar, P. and Collins, D.W., 2002 Journal of Accounting research, 40(1), pp.105-134

computed using modified version of cross-sectional Jones model[6], where ***plant, purchase and equipment, change in revenue less receivable, return and cfo(operating cash flow)*** has been considered as control variable.(all variables are scaled by lagged total asset).

First the non-discretionary component of accrual is estimated by the following expression-

$$\frac{NDA_t}{TA_{t-1}} = \beta_1 \frac{1}{TA_{t-1}} + \beta_2 \frac{PPE_t}{TA_{t-1}} + \beta_3 \frac{\Delta REV_t}{TA_{t-1}} + \beta_4 \frac{PAT_t}{TA_{t-1}} + \beta_5 \frac{CFO_t}{TA_{t-1}}$$

NDA_t: estimated non − discretionary accrual (scaled by lagged assest)

$TACC_t$:Total accrual in year t

PPE_t:gross plant, property and equipment at year t

ΔREV_t:change in revenue

PAT_t:Profit after tax at year t

CFO_t:operating cash flow at year t

TA_{t-1}:total asset in year t-1

The parameters $\beta_1,\beta_2,\beta_3,\beta_4,\beta_5$ are specific to industry and year and estimated by regressing $TACC_t/TA_{t-1}$ on the control variables

Then the discretionary accrual ratio is computed by subtracting non-discretionary component from total accrual.

$$DA_t = TACC_t - NDA_t$$

This discretionary accrual measures that part of accrual which is manipulated by the management for inflating or deflating profit. Therefore, larger proportion of discretionary accruals denotes higher earnings management.

Earnings Management Score (EMS)

We have developed a proprietary earnings management score (EMS) where a higher number indicates greater earnings management. Thus EMS quantifies the magnitude of each firm's earnings management. The score is calculated using six variables for each firm- balance sheet and cash flow total accruals, balance sheet and cash

---

[6] Detecting earnings management, Dechow, P.M., Sloan, R.G. and Sweeney, A.P., 1995. Accounting review, pp.193-225.

flow discretionary accruals, the correlation between net income (profit after tax) and balance sheet and cash flow total accruals. For each year the total range of each variable is divided into six quintiles obtained from 16.66, 33.33 50, 66.67 83.33 and 100 percentile values of the variable. A firm-year observation is given a weight between 0.25 and 4 based on the following scheme:

Table 1: Weighting Scheme

Quintile Range	Weight
First (<16.66)	0.25
Second (16.66- 33.33)	0.50
Third (33.33-50)	1
Fourth (50-66.67)	2
Fifth (66.67-83.33)	3
Sixth (>83.33)	4

The above range of values is obtained for each firm twice based on its position - one at the overall level (based on 1691 companies) and again at industry level (based on number of companies in an industry). For example, a firm may have a value of discretionary balance sheet accrual at the third quintile based on the entire sample of 1691 firms and at the fifth quintile based on values of firms from the same industry. Thus for each of the 6 variables we have created two weights (one for its position at the overall level and the other for its position at the industry level). So we have 12 weights for each firm-year observation. Finally, earnings management score is calculated following a proprietary method using the weighted variables of the six variables.

Shareholding Pattern and EMS

Our study uses data of 1691 non-financial companies, covering 37 industries, for which complete information are available from 2005-06 through 2015-16. Necessary financial data for each firm is obtained from Ace Equity database. Our results show that any EMS above 2000 indicates strong earnings management. Table 2 shows that more than 50% of firms in our sample have an EMS of greater than 2000. More than 10% of firms have EMS greater than 5000. Thus, earnings management is rampant in India.

Table 2: Frequency Distribution of EMS

Range	No of companies	Cumulative Frequency
0-100	120	7.09%
100-1000	221	20.16%
1000-2000	364	41.69%
2000-3000	348	62.27%
3000-4000	248	76.93%

4000-5000	188	88.05%
>5000	202	100%
Total	1691	

The relationship between promoters' holding and EMS (table 3) is not straightforward. Initially EMS increased linearly with increase in promoters' holding (entrenchment hypothesis) and thereafter (promoters' holding beyond 75%) EMS decreases with increase in holding (alignment hypothesis). Entrenchment hypothesis states that controlling shareholders (*read* promoters) entrench by managing earnings upwards as their control rights becomes greater than their cash flow rights. As cash flow rights (i.e., ownership) of promoters increase, the level of discretionary accruals of the controlled firms tends to decrease. Alignment hypothesis suggests that the incentive for earnings management decreases as inside owners interests are aligned with interest of 'outside' shareholders. It is observed that beyond 30% of promoters holding, EMS is almost static till 70% and then declines. There was a sharp fall in the score beyond 75% implying thereby that promoters do not resort to much earning management when a company becomes private.

Table 3: Relationship between Promoters' Shareholdings and EMS

Promoter Shareholdings	No of Companies	EMS
<1%	26	340
1-10%	17	2230
10-20%	32	2225
20-30%	118	2355
30-40%	227	2340
40-50%	296	2360
50-60%	364	2350
60-70%	286	2355
70-80%	178	2400
80-90%	46	1840
90-100%	79	1920

Results for Institutional holdings are more pronounced (Table 4). The average EMS is high when there is less monitoring by institutional owners. But once institutional holding crosses 25% (signifying some level of monitoring with voting rights), EMS decreases. Our EMS is designed in such a way that any score less than 2000 signifies lower level of earnings management which should not invite legal scrutiny.

Table 4: Relationship between Institutional Shareholdings and EMS

Institutional Shareholdings	No of Companies	EMS
<1%	557	2340
1-5%	312	2585
5-10%	245	2330
10-15%	189	2360
15-20%	126	2335
20-25%	83	2230
25-30%	51	1370
30-35%	42	2240
35-50%	45	1240
>50%	19	1560

Financially Stressed Firms and EMS

Some studies[7] show that lenders' monitoring would lead to lower earnings management. Hence, firms with higher institutional (bank) debt should observe lower earnings management (discretionary accruals). The opposite view suggests that in order to avoid debt covenant violation, firms with high debt are more likely to apply discretion in its reported earnings. Our study supports the latter view.

We have compared credit ratings of Indian firms and the EMS score (Table 5). Median EMS of AAA rated firms in our sample is 1450 while median EMS of D rated firms is 2340. Table 5 shows a sample set of ten AAA-rated and similar number of D-rates firms and their corresponding EMS. It clearly shows that firms with financial distress (lower ratings) resort to greater earnings management to delay the bad news and perhaps to satisfy certain debt covenants.

Table 5: Credit Ratings and EMS

Panel A: EMS of AAA rated firms

Company Name	Rating	Rating Date	Ugrade/downgrade	EMS Score
Cairn India Ltd.	AAA	5/13/2015	Withdrawn	0
GSPL India Gasnet Ltd.	AAA	10/18/2016	Reaffirmed	0
GSPL India Transco Ltd.	AAA	10/18/2016	Reaffirmed	0
Unique Estates Devp. Company Ltd.	AAA	2/27/2017	Reaffirmed	0

---

[7] Earnings Management and Financial Distress: Evidence from India, Khusbu Agrawal and Chanchal Chatterjee. 2015, Global Business Review, Vol 16, Issue 5_suppl pp 140S-154S

Aditya Birla Telecom Ltd.	AAA	2/19/2010	Revised	10
Gulf Oil Lubricants India Ltd.	AAA	2/13/2017	Reaffirmed	10
Indian Petrochemicals Corporation Ltd. [Merged]	AAA	3/16/2007	Reaffirmed	10
Mazagon Dock Ltd.	AAA	10/12/2015	Withdrawn	10
ONGC Mangalore Petrochemicals Ltd.	AAA	3/10/2017	Affirmed	10
Bombay Burmah Trading Corporation Ltd.	AAA	4/5/2017	Reaffirmed	20
GAIL (India) Ltd.	AAA	4/10/2017	Affirmed	20

Panel B: EMS of D rated firms

Company Name	Rating	Rating Date	Ugrade/downgrade	EMS Score
LML Ltd.	D	12/26/2016	Reaffirmed	10100
Paramount Communications Ltd.	D	9/17/2015	Suspended	8990
Hiran Orgochem Ltd.	D	5/19/2011	Suspended	8880
Facor Alloys Ltd.	D	2/14/2017	Reaffirmed	8210
Shreyas Intermediates Ltd.	D	12/16/2013	Suspended	8110
Vimal Oil & Foods Ltd.	D	12/30/2016	Reaffirmed	8000
ICSA (India) Ltd.	D	11/23/2011	Downgraded	7990
Omnitech Infosolutions Ltd.	D	6/8/2015	Suspended	7990
Quintegra Solutions Ltd.	D	12/4/2013	Withdrawn	7990
Tecpro Systems Ltd.	D	10/27/2016	Reaffirmed	7780
Refex Industries Ltd.	D	5/15/2014	Suspended	6990

We have also looked at the EMS of firms experiencing various stages of financial stress using a proprietary dataset that classifies firms into three buckets- highly stressed, vulnerable, and non-vulnerable. Our results (Table 6) again supports the hypothesis that financially stressed firms resort to greater earnings management.

Table 6: EMS and Level of Financial Distress

Classification	Median EMS
Highly Stressed	3570
Vulnerable	2370
Not Vulnerable	1460

Conclusions

Opportunistic earnings management by firms is a matter of concern of regulatory authorities. Therefore, a comprehensive measure of earnings management would help regulators in identifying firms that resort to greater degree of earnings management. The difficulty in developing such a measure is that the variable (earnings management) itself is unobservable. It is easy to define the concept of earnings management. But it is extremely difficult to identify a suitable proxy for it. Experts have so far used total accrual or more popularly, discretionary accrual as a proxy for earnings management. Our study uses a list of six variables to estimate a comprehensive earnings management score. Our study provides insights into the relationship between earnings management and shareholding pattern. Further our study shows that financially stressed firms resort to greater level of earnings management. We believe that regulators, financial institutions and even investment managers would find our EMS effective and useful.

****

Sniff Test on the New IIP Series

Deep N Mukherjee

Deep N Mukherjee is currently Chief Product Officer, handling product design and analytics in a Indian credit bureau. He has over 14 years of experience in Risk Management and Credit Assessment. Prior to his current role, within Fitch he was in structured finance team. Prior to his organization he was with American Express where he was heading the Institutional Risk Management Team focusing on quantitative risk management. He is also a visiting faculty in finance with IIM Calcutta. He has done his graduation in engineering from IIT, Kharagpur (BTech, 1999) and has obtained his management degree from IIM Lucknow (PGDM 2002).

The new Series of Index of Industrial Production (IIP) which was launched with the Base Year 2011-12 provided a much needed refresh to 2004-05 Series. As such, these are periodic updates which are made so that macroeconomic indices, in this case, IIP represent the goods which reflect the changes in the economy while removing goods which are no longer relevant to the economy. However the new Series is not just about swap-in of relevant goods and swap out of economically irrelevant goods.

In terms of overall construct the weight of Manufacturing Sector has gone up in the updated IIP in comparison to the old Series, while the sector weight of Electricity has come down by a comparable amount. The higher weight on manufacturing is more representative of the higher importance of private sector manufacturing in the Indian economy in comparison to sectors which are heavily regulated by the government.

Sector	Base year 2011-12		Base year 2004-05	
	Weights (%)	Item groups	Weights (%)	Item groups
Mining	14.373	1	14.157	1
Manufacturing	77.633	405	75.527	397
Electricity	7.994	1	10.316	1
Total	100	407	100	399

The Manufacturing Sector in the New Series has 809 items as compared to 620 in the old Series. As per Ministry of Statistics and Program Implementation (MOSPI), 149 new item are added in the new Series and 120 items from the old series has been removed.

Further to improve the granularity of sectoral focus within industry, the New Series splits up Basic Goods into Primary Goods and Infrastructure/Construction Goods. This is a good move as it will give economy watchers an

idea of economic activity associated with sustaining the economy. On the other hand, tracking Capital Goods and Infrastructure/Construction Goods IIP is expected to provide a better view of Capex activity.

New Series (base 2011-12)	Item groups	Weights (%)	Old Series (base 2004-05)	Item groups	Weights (%)
Primary goods	15	34.05	Basic Goods	88	45.68
Intermediate goods	110	17.22	Intermediate goods	106	15.69
Capital goods	67	8.22	Capital goods	73	8.83
Infrastructure/ construction goods	29	12.34	NA	--	--
Consumer durables	86	12.84	Consumer durables	43	8.46
Consumer nondurables	100	15.33	Consumer nondurables	89	21.34
TOTAL	407	100	TOTAL	399	100

Changes in Methodology: Certain changes made in IIP estimation methodology makes the output of the new series difficult to compare with that of the old series. In fact prima facie, one may have to wait for more values to come out of the new series in future to conclude whether these changes in the New Series improved the accuracy of tracking economy or they replaced one set of estimation errors and data issues with another set. Of course it must be borne in mind that no macro-economic measures or indices can be error free. An improvement in methodology for estimating these measures mean lesser estimation errors than in the past. The three changes which need to be understood to appreciate the output from the new Series are explained below.

Capital Goods Related Adjustment: Capital Goods form ~8% weight of IIP (both series). Capital Goods IIP, in the past, usually caused furore among market watchers whenever it was released. The market watchers criticised the lumpiness of the Capital Goods IIP number, often neglecting the fact that this was the nature of the animal. Units of most capital goods takes more than a month to produce so there are months when the goods are not finished so the IIP is low and in months when the production is complete the Capital Goods IIP number shoots up. This is a problem, possibly, with no perfect solution. However, responding to popular (which need not always be correct) criticism in the NEW Series, the approach adopted is one of calculating a measure called Operating Work-in-Progress (WIP) of Capital Goods. In fact companies use this type of accounting treatment to capture the value of unfinished capex or capital goods manufacture in their annual balance sheet. Companies calculate WIP typically once a year but at a company level. Larger well established companies may track WIP quarterly but mostly for internal purposes. It is difficult to conceive how mid-sized to small companies will calculate this on a monthly basis that too at a factory level to furnish the data for IIP estimation. So possibly the 'volatility' in capital goods IIP will be reduced but the jury is still out on whether there will be a qualitative improvement in the information content of the capital goods IIP.

Monetary Value of Production: IIP is expected to measure physical volume of output in an economy. However for certain products the volume is difficult to measure, in such cases the monetary value is considered and further processed to estimate the 'real value' which is taken as a proxy for volume. The monetary value is deflated by the relevant inflation measure to estimate 'real' production. Despite such adjustments, empirically it is observed that a rising inflation tends to benefit IIPs to the extent it has high component of 'monetary value' measure. In the new series production value for 109 items will be measured by monetary value (deflated by WPI). This number was 53 in the previous series.

Factory Frame: The new Series has a higher number of factories mostly to account for the additional new items. The Working Group for Development of Methodology for Compilation of All-India Index of Industrial Production with Base Year 2009-10/2011-12 suggested that apart from the factories covered under Annual Survey of Industries (ASI), factories covered by other sources may also be added to the New Series. As such measures, such as IIP, globally replaces closed factories with functioning factory but during the transition period the loss in production gets reflected in the IIP number. However when a new series is launched because of inclusion of stronger companies which remains open for most years around base year the production trend may be more positive for these selected factories than for rest of the economy where factories close down regularly. This may be among the reasons of why the new IIP growth is consistently above the previous series.

Some Expected Difference, Some Explained Difference: While the MOSPI clearly states that the two Series are not strictly comparable, a comparison between the two series may still be done to find out how our understanding of the economic performance for the last five years needs to be re-calibrated.

The new series shows higher growth than the old series in three-fourth of the months since April 2012 till date. The new series includes items which are actively produced as opposed to previous series where some items were hardly produced in any scale and this phenomenon may partly explain the higher growth numbers. However what becomes difficult to explain is why the growth trends are significantly diverging in the two series particularly from December 2015 till March 2017.

Indian Institute of Management Calcutta
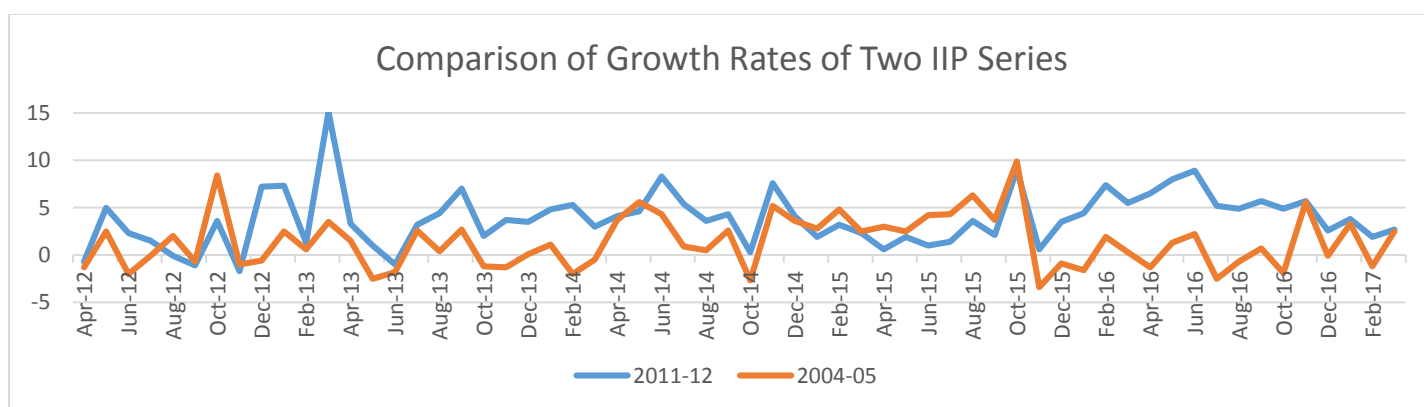
The author estimates approximately two-third of the weightage in the New Series is attributable to items which were common to the old series. Thus one may assume that there would be a high positive correlation between the two series- which has actually been the case till Dec 2015.
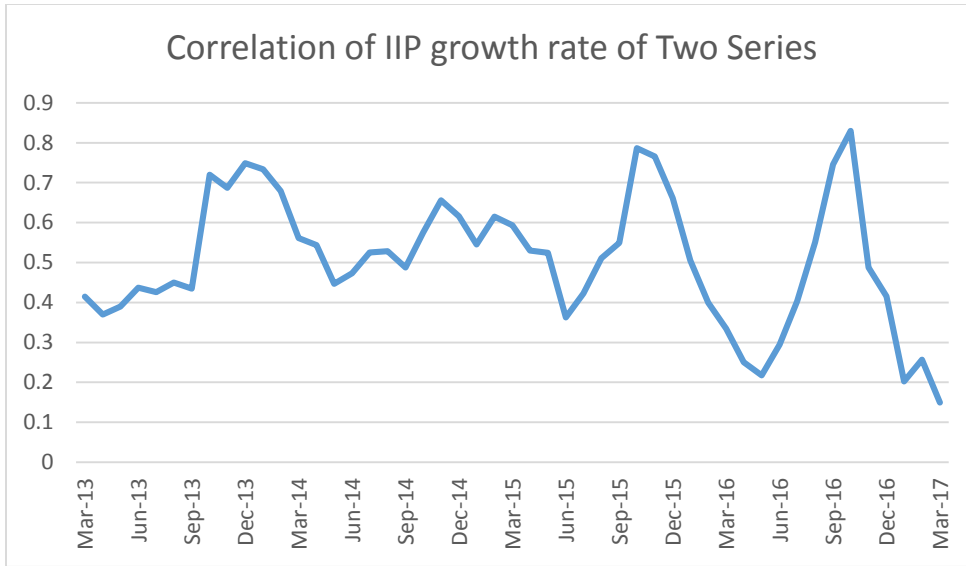
However, post 2015 that there is a sharp fall in correlation between the two Series as shown by the divergent trends. Given the disclosed information there is no clear explanation of this observation.

The Sniff Test of the New IIP Series:

The New Series adds factories from Department of Industrial Policy and Promotion (DIPP) over and above factories identified under ASI. As such for our Sniff test we have taken the ASI survey (the latest one) and compared it with the annual average IIP(New Series) for the three years for which ASI data is currently available. As per the New Series the IIP growth has improved sequentially between 2012-13 and 2014-15

Median IIP Growth -Annual (%)		
2012-13	2013-14	2014-15
2011-12	1.9	3.4	4.1
2004-05	0.25	-0.9	3.2

As per ASI, during those same years growth for most parameters has either fallen sequentially or has shown some improvement in 2013-14 and nose- dived in 2014-15.

|	Growth Rate of Select Parameters From Annual Survey of Industries		
	2012-13	2013-14	2014-15
NUMBER OF FACTORIES	2%	1%	3%
TOTAL PERSON ENGAGED	-4%	5%	3%
FUELS CONSUMED	10%	12%	0%
MATERIAL CONSUMED	5%	8%	3%
VALUE OF OUTPUT	6%	9%	5%
STOCK OF SEMI FINISHED GOODS	-31%	17%	-45%
STOCK OF FINISHED GOODS	10%	-56%	-9%

Of course it is possible that the factories identified in DIPP have performed exceptionally well and thus when aggregated with factories identified by ASI, the overall output shows an improvement. Clearly more disclosures are required from MOSPI to help everyone understand the trend shown by the new IIP Series.

****

Market Watch

Bull Run: How long will the frenzy last?

Rohan Jain

(PGP Student, 1st year, IIM Calcutta)
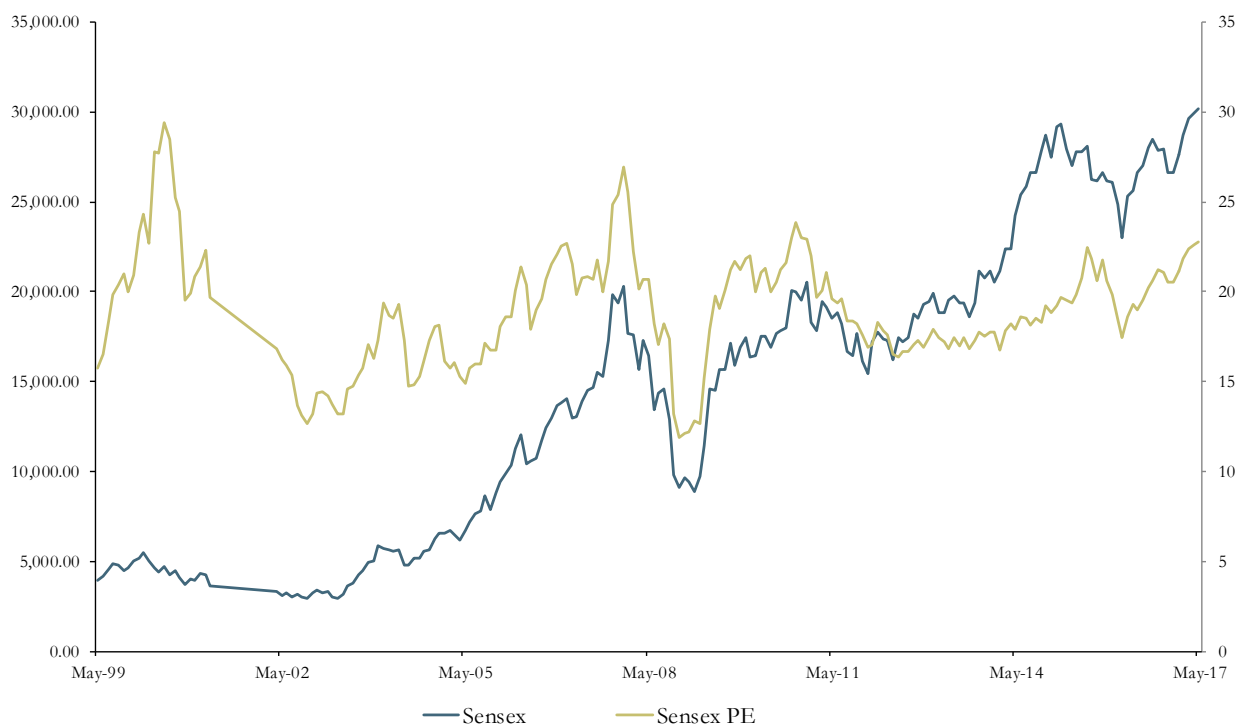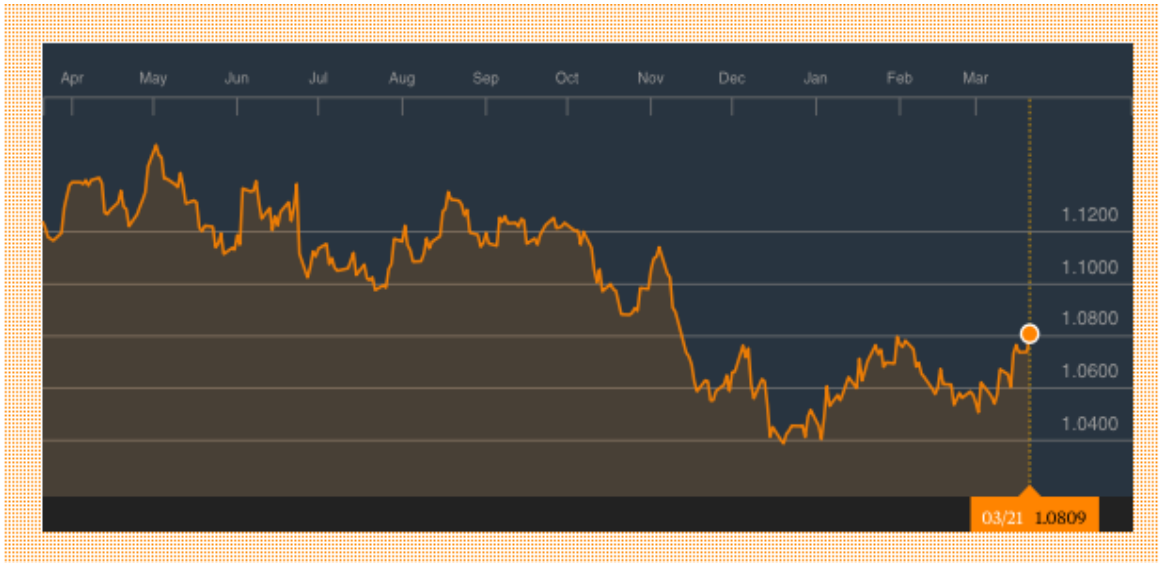

Source: BSE

Historically, Sensex has traded at a mean level of 18.6x in the last 20 years with a high of 29.4x in June, 2000 and a low of 11.9x in November, 2008. Currently it is trading at a PE of 22.8x.

It took the Dot com bubble to end the bull run in 2000 and a financial crisis in 2008 to end the frenzy. Once again, when the Sensex is approaching historically dangerous highs, the question is how long will it sustain and what will it take to end this bull run?

****

Indian Institute of Management Calcutta

Euro may no longer be headed towards parity

Yash Gupta

(PGP Student, 1st year, IIM Calcutta)

EUR-USD Spot Exchange rate

Source: Bloomberg

Post the election of Trump, Euro was headed towards parity. From 1.10 it went till 1.04, only to find a strong support at this historic level. The euro last traded below parity in June 2002, before a period of sustained dollar weakness saw the single currency appreciate for six years to a lifetime high of 1.60 in 2008.

The subsequent reversal has taken it back to 1.081, close to the significant resistance at 1.084. Breakthrough beyond this level will significantly reduce the probability of euro heading towards parity in the near to medium term.

****