

Effects of Economic Crisis on Indian Commercial Banking Industry: an Evaluation

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Abstract

We try to evaluate the significance of demand and time liabilities of scheduled commercial banks on total credit at different periods- Nationalization, Post liberalization and Post crisis. During the post nationalization era, both demand and time deposits were significant contributors towards the total advance of commercial banks. During the post liberalization era, only demand deposit was significant. Post crisis period shows that, time deposit is the significant element. During post crisis period, more long term liabilities are being converted into current assets. The process can be termed as maturity shortening. It is a destructing element in meaningful financial intermediation.

Keywords: Crisis, Shadow banking, Maturity Shortening, Maturity transformation, Nationalization

Introduction

The global financial crisis continue to be a factor in the overall functioning of Indian commercial banking system as the macro financial risks

has been shifted from developed economies to developing regions with some unpredictable consequences such as weakening prospects of growth, falling commodity prices and strengthening of the dollar. Commercial banking system in India acted as a savior at a time of crises, to some extent; with strong fundamentals, some are contradictory to the developmental practices of crises affected nations. By how much this industry saved us is an investigating matter. The banking system, however, witnessed erosion in that fundamental aspects after the crisis something to be 'justifiable' in terms of global drives. So the banks 'interest' have changed drastically and supported different sectors at different times (See Table I). In the context where certain predictions generated regarding the possible recessionary pressures at global levels, more importantly, if it be ratified by the eminent institutional heads, it is high time to analyze the fundamental efficiency of banks in India. Policy initiatives and its quantitative effect on banking system at large shall be set apart from the focus as the same is conveniently developed, after considering the situational factors. Indian Banking industry passed through three different revolutionary shocks- Nationalization, liberalization and economic crisis. It is claimed that, Indian Banking Sector is capable to overcome the global forces, mostly incepted in developed regions. Thanks to the structure of banking industry, it is true to some extent. But the specified revolutions, which affected the asset liability structure of banking sector, resulted in some impacts both at macro and micro level. This paper tries to evaluate the significance of demand and time liabilities of scheduled commercial banks on total credit at different periods- Nationalization, Post liberalization and Post crisis.

Literature Review

Arguably, the qualitative perceptions about the development drastically changed after the crisis. That perceptual shift has been crystallized while we look into the consequential drastic fall in the priority sector advances in India . In this context, the proposal of **Sangmi**, (2010) is relevant as they recognized capital adequacy, asset quality, Management capability and liquidity are sufficient earmarks for presuming the soundness of banking in India. This underlines the essentiality of certain diversified parameters for measuring the performance of banking, which are to be stuffed with the changed

circumstances of post crisis era. Improved net interest margin, increased cost of intermediation and response with higher efficiency levels are some of the by products of crises. However, a rough estimate of the credit deposit ratio shall be an all time indicator of the goodness of economy as the same determines the absolute efficiency of banks within the framework of the above mentioned elements. Blaming the past four years of recession, **Nagarkar**, (2015) pitied the struggling efforts of Indian banking industry which is trying to achieve a mere 19% growth, on the contrary to the pre crisis performance average growth rate of +30%. Multitude of factors and suspicious elements are there, including the emergence and development of Non Banking Finance Companies (NBFCs). In reality, the crisis is the background for the emergence of shadow banking in world financial market. Commercial bank driven maturity transformation, financial leverage and opaque regulatory measures are the building blocks of shadow banking industry in India.

In India, it was during the tenure of inclusionary efforts that the bubbles of crisis emerged in world wide and reached in Indian economy as a transversal effect. There is no doubt that the meaningful inclusion deserves the augmented performance of small scale units of industry in India. That varied performance would have been affected the banking sector much. The context could be read with the similar results at other developing nations such as Belgium- where 43 % of SMEs experienced extended delays in their receivables, Netherlands- where 50 % of SMEs have to deal with longer payment terms from their customers, and New Zealand- the share of enterprises waiting over 60 days for payment has risen dramatically from 4.8 % to 29.5%¹

Large players in the financial market, especially Multi National Companies (MNCs) have to legitimately face the consequences of crisis as the prescience of such entities had demanded contingencies earlier itself. SMEs in India had faced challenges from both giant corporates and crisis at that time. The way by which such small entities faced was majorly on acquaintance of inputs and finance. Banks at that time was not powerful enough to specifically focus the small scale units. However the post crisis era suspiciously looks on the capitalist considerations of commercial banking in India which

rooted strongly in nationalised era, with the scaffolds of socialistic credos. Conveniently we can divide the period into different eras. From 1950s to 1969- a period when socialistic ideals reined even minute economic decisions of Country but the banking sector floated due to the contradictory aspects in demand and supply of funds, the former dominated by a few industrialists and the later by some minority class. In a sense the first generation non banks incepted at that era. 1969 to 1990 was arguably, a period of national control in the name of welfare and again the period witnessed ever widening gap between the rich and the poor. 1990 to 2007 was post liberalisation or a pre crisis period. It was during that era an intensive requirement for inclusion raised. Experiments and experiences showcased that inclusion is a social and basic infrastructure for future prosperity of any sector. It is now on that platform all other developments shoots. The remaining period or ongoing one is after 2007. The effects of crisis was not only drastic but immeasurable to some extent. To analyse the problems of banking sector in the light of crisis would be a herculean task, especially in the context of ambiguous preconditions something which was developed earlier by the 'crisis makers' themselves. The crisis made a gigantic downshift in the path of output, consumption and financial wealth of developed nations. USA has borne additional loss from extended unemployment and increased intervention by government authorities. The financial crisis resulted in loss of national output for USA between \$6 trillion and \$ 14 trillion. Although developing nations suffered a lot, emerging Asia has not had to commit much to financial institutions and its international reserves as these institutions were in the driving force of developed nations. Structure of banking also benefitted to emerging nations in coping with systemic risks. Even impacts of crisis effected in such regions after it has already started in the developed and advanced economies. Apart from these benefits, emerging nations show symptoms for early recovery from crisis than developed nations.

Adrian & Shin, (2010) described the changing nature of financial intermediation in the market-based financial system. The very season witnessed a comment from **Cetorelli, Mandel, & Mollineaux**, (2012), who, shown through both role-based and an entity-based approach, that regulated banking institutions have remained crucially important in every aspects of the credit intermediation chain. In one sense, the market driven credos eventually

resulted in overall brekdown in financial momentum and the same ideas floated over the vicimised institutions thereafter. The initiated market driven credos will not be thrown out by itself out of the financial institutions web of any nation. Consequently every economies tend to change the very basic principles of mediation itself. The scheduled commercial banks in India have been significantly performed and contributed to the national growth of the country performing since 2004 (**Paul**, 2015). Meanwhile, **Jayaraman & Srinivasan**, (2014) observed that Shannon-DEA approach provided a comprehensive efficiency index for banks and a reasonable way of ranking.

Empirical Framework

In this study, significance of maturity of debt of commercial banks is evaluated. Time and demand deposits are two extreme variant types of debt of commercial banks in India. Numerous aspects are there to be identifiable which deserve analysis; some were blighted due to the crisis effects. The ardent platform, on which the Indian economy sustained, if any, was solely on the exalted banking networks. The late 1950s flounders with the mass demand for resurfaced financial mediation which was dominated with unorganized sector. Productivity of the mass, inclusion and sustainability of mediation were hardly focused during that regime. During the year 1957-58, aggregate deposit of scheduled commercial banks was mere Rs 14.52 billion, of which a good portion, Rs 4.4 billion had to be apportioned as government investments. The total deposits of that time never been matched with the growth rate of population. Nationalization, primarily rests on endogenous interests of nation, was not a shift based on some ostensible, rather it was a revolutionary concept which then effected after strictures on economic concentration. Liberalization, sometimes regarded as prodding of all aspects of mediation and criticized as the process, absolutely linked with exogenous elements, snuffed out the fundamentals of national interests in banking. Crisis (2007-08) brought a chance for exposing the strong credentials of Indian banking to world. The three revolutionary and contagious shifts and shocks affected the credit disbursal system of scheduled commercial banks in India. Data is given in Table II.

Data

As some contexts necessitates a rough comparison of periods of commercial banking in India, amongst literature, present paper intends to take a bird's view on the credit creation efficacy of commercial banks during the post independent, post liberalized and post crisis periods. The credit creation efficacy, to some extent, is a function of maturity transformation. The researcher explored some secondary data from the apex observer, Reserve Bank of India (RBI), perhaps, bestowed with abundant supply of time series data concerning financial intermediaries at national level.

Empirical Strategy

Nationalization, liberalization and economic crisis contributed something towards the significance of structure of liability of commercial banks. So these revolutionary shocks are modeled here as, Model 1- Nationalization (1969-90), Model 2-Post liberalization (1990-2007) and Model 3- Post Crisis (2007-2015). During these three periods, significance of time and demand deposits on total credit is analyzed. Total credit disbursed by the commercial banks is a function of total time and demand deposits. Ordinary least square (OLS) regression method is run and the model can be described as follows;

$$BC = \alpha + \beta_1 DD + \beta_2 TD + \varepsilon$$

Where,

BC = Total Bank Credit

DD = Demand Deposits

TD = Time Deposits

α = Constant

ε = Error term

In three models this equation is repeating with the same variables.

Empirical Results

The R^2 (Multiple Coefficient of determination) lies between 0 and 1. Closer it to one; better is the fit- implying estimated regression line is capable of explaining greater proportions of variation in Y. In the first model, about 99.8% of the variations in bank credit can be explained by a variation in the dependent variables, which is indeed high and indicates a good fit to the given

sample. In the case of second and third model, it is 99.1 % and 99.9 % respectively which are indicators of good fit. Adjusted R Square indicate that about percentage of the variability bank credit is accounted for and by the first model it is 99.7 % by the second model 99 %, and by the third model 99.8 % even after taking into account the number of predictor variables in the model. Regression results are consolidated in Table III.

F value larger than one will indicate that hypothesis of variables x_1, x_2, \dots, x_n having no effect on Y cannot sustain (Against the 'truthfulness' of $H_0: B_1 = B_2 = 0$). In these models, large F values significantly accommodates the alternative hypothesis- independent variables strongly affect the bank credit.

The Coefficients for each of the variables indicates the amount of change one could expect in bank credit given a one unit change in the value of that variable, given that all other variables in the models are held constant. Standardised Beta Coefficients are all measured in Standard Deviations, instead of the units of the variables, they can be compared to one another. Time deposit during the post crisis period has the largest beta coefficient, 1.044 demand deposit during the same period has the smallest beta, -.049. Thus, a one standard deviation increase in time deposit leads to a 1.044 standard deviation increase in predicted bank credit, with the other variables held constant. And one standard deviation increase in demand deposit in turn, leads to a .049 standard deviation decrease in bank credit with the other variables in the model held constant.

Allocation of bank credit to different sectors does not in commensurate with the contributory share of respective sectors. For instance, service sector got mere 7.49 per cent of total credit of scheduled commercial banks for the year 2014. Inclusionary initiatives have to be understated in this context, as volume of credit allocated to the agriculture sector was negligible compared to industrial sector. Sunshine sector-infrastructure is not a shaggy element for banking industry during the tenure.

Nationalization was, effective in augmenting the total deposits and the effectiveness of that can be seen during the initial years of 1970s. A full stretch

leaping effected by which negative growth rate of -1.7 percent of 1960-61 transformed into double digit growth in the initial period of 1970s itself. Support from the government, a timely arrangement, boosted the banking industry. That support shall be seen as an igniting source for further investments itself; the remaining part of the nationalized era shows it. Growth in deposits was not so attractive during the early pre crisis period- liberalized era, 2000 to 2005. The atmosphere was filled with rampant opportunities for investment, which forced savers to set aside the little something for else, rather than concentrating on the sole gatherer- commercial banks. Excluding 2003-04 and 2004-05, the remaining years, which were pegging around the crisis, witnessed with risky, conservative, and unproductive existence of more liquid money in the entire banking system. 2005 to 2007, the inception period of crisis was bulged with unnecessary liquid money in the system-which was, in a sense unexplainable. The year 2005 is worth mentioning as it marked with around 54 per cent increase in liquid cash in our system. These uneven movements in certain important bank items supports hypothesis, the shifts in banking industry has reasonably affected some primary banking functions.

Regression results shows that, in the first model, during the post nationalization era, *both demand and time deposits were significant contributors* towards the total advance of commercial banks. But in the second model, during the post liberalization era, only *demand deposit* was significant. Time deposit was an insignificant contributory in total credit. In the third model, post crisis period shows that, *time deposit* is the significant element. Comparing the rest, in this framework which focuses on the structure of liability maturity, nationalization period was a better one as both the time and demand liabilities were meaningfully transformed into assets. Liberalization augmented the aggregate economic activities and resulted in the accumulation of more demand liability. This demand liability played a huge role in financial intermediation in the country. Theoretically, banks are expected to create or help to create fixed assets using the available short term deposits (Maturity Transformation). In that sense, banks showed appreciable performance during

the post liberalization period. Post crisis period acknowledges a significant role of time liabilities to create total advances. This contrasts meaningful financial intermediation. Here, during post crisis period, more long term liabilities are being converted into current assets. The process can be termed as maturity shortening. It is a destructing element in meaningful financial intermediation.

Suggestions and concluding remarks

One cannot see a direct impact of global economic crisis on Indian Banking Industry. At the same time, some disastrous elements, which had seriously affected advanced economies, contagiously affected Indian commercial banking system since the crisis. One such element- maturity shortening- is a threat to Indian economy. Lessened interest rates and resultant reduction in the volume of time liability will not nullify the maturity shortening process. Monetary authority must consider the overall impact of shortening. Accordingly, it must encompass sufficient measures while designing the rates. In the context of fiscal consolidation, banks are struggling to advance the Multi National Companies (MNCs). Comparing these MNCs, domestic micro enterprises hardly make fixed assets. For instance, micro enterprises cannot obtain land at inflated prices. In fact, the credit provided by the banks to these micro enterprises and the little formation of fixed assets leads to maturity shortening. So authorities must observe the volume and type of assets which are being generated by micro enterprises. The coming days will be the worst, not in acquiring but managing the savings. The situation must be read with the baseline projection for global growth in 2016- a modest 3.2 percent (International Monetary Fund(IMF), World economic outlook: too slow for too long, April 2016). A recovery is projected to strengthen in 2017 and beyond, solely on the backbone of emerging economies like India. The policy stance moves in different directions across emerging markets like Mexico, South Asia, Chile, Colombia and Peru. In this regards, IMF cautiously looks the contrast movement of monetary policy rates in India, in an eased manner.

APPENDIX**Table 1: Outstanding Credit of Scheduled Commercial Banks
According to Occupation March 2014**

Sector	Percentage
Agriculture	13.4
Industry	41.65
Transport Operators	2.07
Professional And Other Services	7.49
Personal Loans	16.19
Trade	9.14
Finance	8.07
All Others	2.01

*Source: RBI***Table 2 : Scheduled Commercial Banks -
Select Aggregates (Rs Billion)**

Year	Demand Deposits	Time Deposits	Aggregate Deposits (2+3)	Increase/Decrease	Growth	Investment in Government Securities	Increase/Decrease	Growth	Food Credit	Bank Credit (11+12)	Increase/Decrease	Growth	Cash in Hand
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1957-58	7.31	7.21	14.52			4.4			-	9.63			0.37
1958-59	7.22	9.13	16.35	1.8	12.60	6.13	1.7	39.32	-	10.14	0.5	5.30	0.43
1959-60	7.81	11.21	19.02	2.7	16.33	7.15	1.0	16.64	-	11.28	1.1	11.24	0.62
1960-61	7.1	10.26	17.36	-1.7	8.73	5.59	-1.6	21.82	-	13.36	2.1	18.44	0.46
1961-62	7.86	11.31	19.17	1.8	10.43	6.01	0.4	7.51	-	14.08	0.7	5.39	0.49
1962-63	8.67	11.75	20.42	1.3	6.52	5.93	-0.1	-1.33	-	15.88	1.8	12.78	0.52
1963-64	10.71	12.14	22.85	2.4	11.90	6.4	0.5	7.93	-	18.17	2.3	14.42	0.58
1964-65	12.39	13.44	25.83	3.0	13.04	7.18	0.8	12.19	-	20.35	2.2	12.00	0.67
1965-66	14.27	15.23	29.5	3.7	14.21	8.11	0.9	12.95	-	22.87	2.5	12.38	0.73

1966-67	16.49	17.76	34.25	4.8	16.10	8.93	0.8	10.11	-	26.92	4.1	17.71	0.87
1967-68	18.45	20.11	38.56	4.3	12.58	9.67	0.7	8.29	-	30.32	3.4	12.63	0.89
1968-69	19.34	24.04	43.38	4.8	12.50	10.55	0.9	9.10	-	33.96	3.6	12.01	1.09
1969-70	22.35	27.93	50.28	6.9	15.91	11.67	1.1	10.62	-	39.71	5.8	16.93	1.46
1970-71	26.26	32.8	59.06	8.8	17.46	13.62	2.0	16.71	-	46.84	7.1	17.96	1.67
1971-72	31.27	39.79	71.06	12.0	20.32	16.5	2.9	21.15	-	52.63	5.8	12.36	1.81
1972-73	37.94	48.49	86.43	15.4	21.63	21.61	5.1	30.97	-	61.15	8.5	16.19	2.21
1973-74	43.36	58.03	101.39	15.0	17.31	23.62	2.0	9.30	-	73.99	12.8	21.00	2.46
1974-75	49.63	68.65	118.27	16.9	16.65	28.26	4.6	19.64	-	87.62	13.6	18.42	2.96

Source: A hand book on Indian economy, RBI

Table 3: Regression Results

Year	Demand Deposits	Time Deposits	Aggregate Deposits (2+3)	Increase/Decrease	Growth	Investment in Government Securities	Increase/Decrease	Growth	Food Credit	Bank Credit (11+12)	Increase/Decrease	Growth	Cash in Hand
1	2	3	4	5	6	7	8	9	10	11	12	13	14
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1965-66	14.27	15.23	29.5	3.7	14.21	8.11	0.9	12.95	-	22.87	2.5	12.38	0.73
1966-67	16.49	17.76	34.25	4.8	16.10	8.93	0.8	10.11	-	26.92	4.1	17.71	0.87
1967-68	18.45	20.11	38.56	4.3	12.58	9.67	0.7	8.29	-	30.32	3.4	12.63	0.89
1968-69	19.34	24.04	43.38	4.8	12.50	10.55	0.9	9.10	-	33.96	3.6	12.01	1.09
1969-70	22.35	27.93	50.28	6.9	15.91	11.67	1.1	10.62	-	39.71	5.8	16.93	1.46

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1973-74	43.36	58.03	101.39	15.0	17.31	23.62	2.0	9.30	-	73.99	12.8	21.00	2.46
1974-75	49.63	68.65	118.27	16.9	16.65	28.26	4.6	19.64	-	87.62	13.6	18.42	2.96
1975-76	58.17	83.38	141.55	23.3	19.68	32.83	4.6	16.17	-	108.77	21.2	24.14	3.05
1976-77	69.43	106.23	175.66	34.1	24.10	39.3	6.5	19.71	-	131.73	23.0	21.11	3.54
1977-78	48.72	173.4	222.11	46.5	26.44	59.07	19.8	50.31	-	149.39	17.7	13.41	4.69
1978-79	58.26	211.9	270.16	48.1	21.63	66.22	7.2	12.10	-	182.85	33.5	22.40	5.57
1979-80	66.43	251.16	317.59	47.4	17.56	74.44	8.2	12.41	-	215.37	32.5	17.79	6.16
1980-81	77.98	301.9	379.88	62.3	19.61	92.19	17.8	23.84	-	253.71	38.3	17.80	7.66
1981-82	83.83	353.5	437.33	57.5	15.12	101.57	9.4	10.17	-	296.82	43.1	16.99	7.88
1982-83	99.84	413.74	513.58	76.3	17.44	120.78	19.2	18.91	-	354.93	58.1	19.58	8.78
1983-84	113.12	492.84	605.96	92.4	17.99	134.73	14.0	11.55	-	412.94	58.0	16.34	9.28
1984-85	141.32	581.13	722.44	116.5	19.22	186.97	52.2	38.77	-	489.53	76.6	18.55	10.44
1985-86	156.12	697.92	854.04	131.6	18.22	190.45	3.5	1.86	-	560.67	71.1	14.53	11.27
1986-87	192.27	834.96	1027.24	173.2	20.28	248.47	58.0	30.46	-	633.08	72.4	12.91	11.74
1987-88	202.47	977.98	1180.45	153.1	14.91	305.17	56.7	22.82	-	705.36	72.3	11.42	13.06
1988-89	233.42	1168.08	1401.5	221.1	18.73	358.15	53.0	17.36	-	847.19	141.8	20.11	14.44
1989-90	288.56	1381.03	1669.59	268.1	19.13	422.92	64.8	18.08	-	1014.53	167.3	19.75	16.49
1990-91	331.92	1593.49	1925.41	255.8	15.32	499.98	77.1	18.22	-	1163.01	148.5	14.64	18.04
1991-92	450.88	1856.7	2307.52	382.2	19.85	627.27	127.3	25.46	-	1255.92	92.9	7.9	20.08
1992-93	464.61	2221.11	2685.72	378.1	16.39	759.45	132.2	21.07	67.43	1519.82	263.9	21.01	22.93
1993-94	565.72	2585.6	3151.32	465.6	17.34	1012.02	252.6	33.26	109.07	1644.18	124.4	8.1	22.83
1994-95	769.03	3099.56	3868.59	717.3	22.76	1176.85	164.8	16.29	122.75	2115.6	471.4	28.67	29.72
1995-96	806.14	3532.05	4338.19	469.6	12.14	1322.27	145.4	12.36	97.91	2540.15	424.6	20.07	31.13
1996-97	906.1	4149.89	5055.97	717.8	16.55	1588.9	266.6	20.16	75.97	2784.01	243.9	9.6	33.47
1997-	1025.	4959.	5984.8	928.	18.	1869.5	280.	17.6	124.	3240.7	456.8	16.	36.08
1998-99	1174.23	5966.02	7140.2	1155.31	19.31	2232.17	362.9	19.36	168.16	3688.37	447.6	13.81	43.62
1999-00	1273.66	6859.78	8133.45	993.2	13.91	2784.56	552.4	24.75	256.91	4359.58	671.2	18.20	53.3

2000-01	1425.52	8200.66	9626.18	1492.7	18.35	3400.35	615.8	22.11	399.91	5114.34	754.8	17.31	56.58
2001-02	1530.48	9503.12	11033.6	1407.4	14.62	4111.76	711.4	20.92	539.78	5897.23	782.9	15.31	62.45
2002-03	1702.89	1110.5.6	12808.53	1774.9	16.09	5234.17	1122.4	27.30	494.79	7292.15	1394.9	23.65	75.67
2003-04	2250.22	1279.3.9	15044.16	2235.6	17.45	6547.58	1313.4	25.09	359.61	8407.85	1115.7	15.30	78.98
2004-05	2480.28	1452.1.7	17001.98	1957.8	13.01	7189.82	642.2	9.81	411.21	11004.28	2596.4	30.88	84.72
2005-06	3646.4	1744.4.1	21090.49	4088.5	24.05	7007.42	-182.4	-2.54	406.91	15070.77	4066.5	36.95	130.46
2006-07	4297.31	2182.2	26119.33	5028.8	23.84	7760.58	753.2	10.75	465.21	19311.89	4241.1	28.14	161.39
2007-08	5243.1	2672.6.3	31969.39	5850.1	22.40	9586.61	1826.0	23.53	443.99	23619.14	4307.3	22.40	180.44
2008-09	5230.85	3311.0.3	38341.1	6371.7	19.93	11557.86	1971.3	20.56	462.11	27755.49	4136.4	17.51	202.81
2009-10	6456.1	3847.2.2	44928.26	6587.2	17.18	13783.95	2226.1	19.26	484.89	32447.88	4692.4	16.91	255.78
2010-11	6417.05	4566.2.6	52079.69	7151.4	15.92	14971.48	1187.5	8.62	642.82	39420.83	6973.0	21.49	303.46
2011-12	6253.3	5283.7.5	59090.82	7011.1	13.46	17350.18	2378.7	15.89	813.04	46118.52	6697.7	16.99	361.29
2012-13	6622.99	6088.1.6	67504.54	8413.7	14.24	20036.53	2686.4	15.48	964.22	52604.59	6486.1	14.06	404.91
2013-14	7139.21	6991.6.4	77055.6	9551.1	14.15	22111.94	2075.4	10.36	984.77	59940.96	7336.4	13.95	458.76
2014-15	7940.29	7739.2.6	85332.85	8277.3	10.74	24897.51	2785.6	12.60	944.18	65364.2	5423.2	9.05	533.55

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