Survey of Professional Forecasters *

The Reserve Bank has been conducting Survey of Professional Forecasters (SPF) since September 2007 at quarterly interval. These forecasters are chosen from those organisations and institutions which have established research set-up and bring out regular updates on Indian economy. The survey asks around 40 forecasters in India and abroad to indicate their expectations in short- to longer-term for macroeconomic indicators in real sector, monetary & banking sector, fiscal sector, financial markets and external sector in India. Based on this survey, median forecasts of selected indicators are published quarterly in the RBI's Macroeconomic and Monetary Developments and the detailed aggregate data are disseminated in the form of a web-article linked to the above document. In this article, forecasts, mainly of growth and inflation for the two financial years 2013-14 and 2014-15 and for the next four quarters are presented based on the latest round. Further, the implicit growth and inflation forecast based on the probability distribution are examined. More importantly, average errors in such forecasts for different periods are evaluated. Apart from the median forecast, weighted average forecast, with weights being determined based on the past forecasting performance of the individual forecasters, has also been worked out. The forecast performance based on the weighted average method was found to be superior than the median based forecasts.

1. Introduction

Forecasts of key macroeconomic indicators, such as output growth, inflation, monetary & banking sector, fiscal sector, financial markets and external sector are important pre-requisites for forward-looking macroeconomic policy making. Availability of reliable and accurate macroeconomic forecasts helps central bank/Government in framing monetary and fiscal policy. Additionally, they are useful to firms in making investment decisions; individuals in making consumption and savings decisions; and labour union and management in negotiating wage agreements. In this context, recent evidence suggests that while there are various methods of forecasting, survey forecasts outperform other forecasting methods¹. Traditional discussions of the theory of forecasting assume that professional forecasters attempt to minimise their forecast errors by using their training, expertise, and experience. In this respect, several central banks conducts 'Survey of Professional Forecasters (SPF)' on major macroeconomic indicators of short to medium term economic developments as they can signal future risks to price stability and growth, and provide information on how economic agents gauge their risks. Besides, the SPF is just one of the time series used in empirical research on the formation of macroeconomic expectations.

In line with this, the Reserve Bank started the SPF from September 2007, *i.e.*, from the quarter ended Q2:2007-08 on quarterly basis. The results are disseminated through the Reserve Bank's web-site within one month of the end of the quarter. The latest survey, 25th round in the series, was conducted during September 2013 for the second quarter of the current financial year, *i.e.*, for Q2:2013-14.

The SPF does not have a scientific survey design. Forecasters of those organisations are selected, which have an established research set-up and brings out periodic updates on economic developments. These organisations include investment banks, commercial banks, private corporate companies, credit rating agencies, international brokerage houses, select educational institutions, securities firms, asset management companies, *etc.*

The survey schedules are sent to select 40 forecasters every quarter through email. The schedule covers annual as well as quarterly forecasts of major macroeconomic variables. Forecasts of annual indicators

^{*} Prepared in the Statistical Analysis Division of the Department of Statistics and Information Management, Reserve Bnak of India.

¹ Ang. A., G. Bekaertb and M. Wei (2007), "Do macro variables, asset markets, or surveys forecast inflation better?", Journal of Monetary Economics, 54, 1163–1212.

are generally collected for two financial years, while quarterly indicators are collected for four quarters ahead along with the current quarter. The survey also requires forecasters to assign probabilities to possible outcomes of GDP growth and inflation falling in predefined ranges. Besides, forecasts of output growth and inflation for the near-term, it also provides forecast for medium- to long-term forecasts. Long-term average forecasts over the next five years and ten years for GDP growth, inflation based on the Wholesale Price Index (WPI) and Consumer Price Index for Industrial Workers (CPI-IW) are collected. Since extreme forecasts values influence the mean forecast, analysis is done mostly using median forecasts.

2. Annual Forecasts for 2013-14 and 2014-15

As per the latest round of the survey for Q2:2013-14, the median forecast of GDP growth rate (at factor cost at constant prices) for 2013-14 is placed at 4.8 per cent. Growth forecast for industry has been placed at 1.3 per cent, while services is predicted to grow by 6.2 per cent. Agriculture and allied activities is projected to grow by 3.7 per cent (Table 1). For 2014-15, GDP is likely to grow by 5.8 per cent, with industry and services are likely to grow by 3.8 per cent and 7.0 per cent, respectively.

For 2013-14, forecasters expect that money supply (M₃) and bank credit will grow by 13 per cent and 15.3 per cent, respectively. Bank credit is forecast to grow by 16 per cent in 2014-15. These projections are in line with the indicative projections of the Reserve Bank. Gross fiscal deficit (GFD) of the centre is projected to be higher than the budget estimate and is placed at 5 per cent of GDP in 2013-14. For 2014-15, fiscal deficit is likely to improve to 4.7 per cent of GDP. The combined GFD of Centre and State Governments is projected at 7.3 per cent of GDP in 2013-14 and is projected to improve to 7 per cent of GDP in 2014-15.

Exports of merchandise goods, in terms of US dollar, is projected to grow by 3.8 per cent in 2013-14 and further by 8.9 per cent in 2014-15. In line with the likely lower GDP growth, import of merchandise goods

Indicator		2013-14	2014-15
1. GDP at factor cost (growth rate in per cent)		4.8	5.8
1.1. Agriculture and Allied Activities		3.7	3.0
1.2. Industry		1.3	3.8
1.3. Services		6.2	7.0
2. Money Supply (M3) (growth rate in per cent)		13.0	14.1
3. Bank Credit (growth rate in per cent)		15.3	16.0
4. Combined Gross Fiscal Deficit (per cent of GDB	P)	7.3	7.0
5. Central Govt. Fiscal Deficit (per cent of GDP)		5.0	4.7
6. Export (growth rate in per cent)		3.8	8.9
7. Import (growth rate in per cent)		-1.9	6.4
8. Trade Balance (per cent of GDP)		-9.7	-9.4
9. Net Invisible (US dollar)		115.0	121.5
10. Current Account Balance (per cent of GDP)		-3.5	-3.3

Table 1: Median Forecast of Macroeconomic

Indicators for 2013-14 and 2014-15

is projected to fall by 1.9 per cent in 2013-14. Import of goods is projected to grow by 6.4 per cent in 2014-15. The high projected export growth along with a lower import growth is expected to improve the trade deficit to 9.7 per cent of GDP in 2013-14 from 10.6 per cent observed during 2012-13. Trade deficit is further expected to improve to 9.4 per cent of GDP in 2014-15. India is projected to receive US\$ 115.0 billion, under invisible account for the year 2013-14, which is likely to improve further to US\$ 121.5 billion in 2014-15. With likely improvement in the trade deficit and net invisible receipt, the current account deficit (CAD) is projected to improve to 3.5 per cent of GDP in 2013-14 from 4.8 per cent observed in 2012-13. CAD is likely to further improve to 3.3 per cent of GDP in 2014-15.

3. Quarterly Forecasts

Latest survey results show improvement in real GDP growth gradually from Q3:2013-14 to Q2:2014-15 (Table 2). While the agriculture & allied activities is likely to grow at a higher rate during the remaining quarters of 2013-14, both industry and services sectors are likely to improve gradually. Inflation based on WPI is projected to remain high at 6.5 per cent till Q1:2014-15 and is projected to fall to 5.8 per cent in Q2:2014-15. The WPI Manufactured Products inflation is projected to go up gradually from 2.5 per cent in

Table 2: Quarterly Forecasts (Median) of	
Macroeconomic Indicators for	
Q3:2013-14 to Q2:2014-15	

Indicators	Q3: 2013-14	Q4: 2013-14	Q1: 2014-15	Q2: 2014-15
1. GDP at factor cost (growth rate in per cent)	5.0	5.0	5.6	5.8
1.1. Agriculture and Allied Activities	4.1	4.4	3.0	3.0
1.2. Industry	1.4	2.1	3.4	3.3
1.3. Services	6.5	6.5	6.9	7.0
WPI Inflation	6.5	6.5	6.5	5.8
WPI Manufactured Products Inflation	2.5	3.2	3.5	3.7
CPI Industrial Workers Inflation	9.6	9.1	9.3	9.0

Q3:2013-14 to 3.7 per cent in Q2:2014-15. Inflation based on CPI-IW is expected to remain above 9 per cent till Q2:2014-15.

4. Forecasts from Probability Distribution

The forecasters assign probabilities to both annual GDP growth and year-end WPI inflation in the prespecified range given by the RBI. For 2013-14, the forecasters assigned maximum probability of 0.46 to the range of 4.5-4.9 per cent of GDP growth (Table 3).

Table 3: Mean Probabilities attached to possibleoutcomes of GDP growth

Growth Range	Forecasts for 2013-14	Forecasts for 2014-15
Below 2.0 per cent	0	0
2.0 to 2.4 per cent	0	0
2.5 to 2.9 per cent	0	0
3.0 to 3.4 per cent	0.01	0
3.5 to 3.9 per cent	0.03	0.01
4.0 to 4.4 per cent	0.19	0.03
4.5 to 4.9 per cent	0.46	0.09
5.0 to 5.4 per cent	0.26	0.27
5.5 to 5.9 per cent	0.04	0.24
6.0 to 6.4 per cent	0	0.27
6.5 to 6.9 per cent	0	0.10
7.0 to 7.4 per cent	0	0
7.5 to 7.9 per cent	0	0
8.0 to 8.4 per cent	0	0
8.5 to 8.9 per cent	0	0
9.0 to 9.4 per cent	0	0
9.5 to 9.9 per cent	0	0
10.0 per cent or more	0	0

outcomes of WPI Inflation							
Inflation Range	Forecasts for March 2014	Forecasts for March 2015					
Below 0 per cent	0	0					
0 to 0.9 per cent	0	0					
1.0 to 1.9 per cent	0	0					
2.0 to 2.9 per cent	0	0					
3.0 to 3.9 per cent	0.01	0.01					
4.0 to 4.9 per cent	0.09	0.12					
5.0 to 5.9 per cent	0.13	0.44					
6.0 to 6.9 per cent	0.42	0.27					
7.0 to 7.9 per cent	0.24	0.11					
8.0 to 8.9 per cent	0.09	0.04					
9.0 to 9.9 per cent	0.01	0.01					
10.0 to 10.9 per cent	0	0					
11.0 to 11.9 per cent	0	0					

0

0

0

Table 4: Mean Probabilities attached to possible

Based on the probability distribution, the implicit growth forecast is estimated at 4.7 per cent. The forecast of GDP growth, based on the probability distribution, is found to be consistent with the growth forecast indicated earlier. The forecasters assigned highest probability of 0.42 that WPI inflation will fall in the range of 6.0-6.9 per cent in March 2014. For March 2015, maximum probability of 0.44 was assigned that inflation will be in the range of 5.0- 5.9 per cent. Based on the probability distribution, the implicit inflation for March 2014 and March 2015 are estimated to be 6.5 per cent and 6 per cent, respectively.

5. Medium and Long-Term Forecasts

12.0 to 12.9 per cent

13.0 to 13.9 per cent

14.0 per cent or above

The forecasters arrive at their medium- to longterm inflation forecasts based on all available information including the central bank's likely action and hence can be considered rational². Charts in this section present the median projections (the red line) and the corresponding inter-quartile ranges (the grey area along both sides of the red line). In the initial stage

0

0

0

² Mohanty, D. (2012), "The Importance of Inflation Expectations", Reserve Bank of India Monthly Bulletin, December 2012, LXVI(12), 2295-2303.

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of the survey, conducted in the last quarter of 2007-08, *i.e.*, March 2008, the medium term (5-year) and long-term (10-year) GDP growth expectations was around the same level as that of the actual growth. The 5-year annual average GDP growth rate remained same at 8.5 per cent from June 2010 to June 2011 and started to decline gradually thereafter. It has been observed that the median forecast is equal to either third or first quartile many times, suggesting the concentration of the forecast around the median values (Chart 1).

The 10-year annual average GDP growth projection increased from June 2010 to June 2011 and then declined gradually. The inter-quartile range for 10-year growth forecast is found to be relatively higher than the 5-year growth rate forecasts. With persistent decline in the GDP growth from Q4:2010-11, the medium and long-term growth outlook also declined gradually. As per the latest survey, the medium-term and long-term GDP growth expectations declined to 6.5 per cent and 7 per cent, respectively (Chart 2).

The forecast of 5-year annual average point-topoint inflation based on WPI was at 6 per cent in June 2010 and increased gradually to 6.5 per cent in September 2012. With the persistence of near double





digit inflation in 2010 and 2011, the medium term inflation expectations went up. Since the last four rounds of the survey, the medium term WPI inflation expectations have declined gradually. For September 2013, the median and the third quartile projections were around 6 per cent. This suggests that majority of the forecasters' expectations of 5-year average WPI inflation was 6 per cent (Chart 3).





The annual average 10-year WPI inflation increased from June 2010 to September 2011, mainly due to high inflation in 2010 and 2011. The forecast of 10-year annual average WPI inflation remained at 6 per cent during the period from June 2012 to March 2013, and declined to 5.5 per cent in the latest round. The median forecast of the latest round is found to be same as that of the first quartile range, suggesting consensus of the forecasters' expectations of 10-year average WPI inflation at 5.5 per cent (Chart 4).

The consumer price (CPI-IW) inflation expectation has mostly remained higher than the WPI inflation expectation. The high persistent CPI-IW inflation has led to an increase in the CPI inflation expectation. At the same time, the differential between WPI and CPI-IW has also widened. The forecast of 5-year annual average inflation based on CPI-IW was at 7 per cent during June 2010 to March 2012, which increased to 7.5 per cent in June 2013. With the persistence of near double digit consumer price inflation in the recent years, the medium term inflation expectations increased to 8 per cent in September 2013. The annual average 10-year CPI inflation was relatively volatile than the 5-year average, which moved within the range of 6.20 per cent to 6.75 per cent. The latest round conducted in



September 2013 suggests an increase in the 10-year CPI inflation by 25 basis points to 6.75 per cent from 6.50 per cent (Charts 5 and 6).

6. Performance of Quarterly Growth Forecast

Forecasters provide projections of quarterly growth for 4-quarters ahead, along with the current quarter. Following chart presents the deviation of the median forecast from the actual outturn for the period from





Q1:2009-10 to Q1:2013-14 with different forecast horizon (Chart 7). It has been observed that median forecast tends closer to the actual data as the forecast horizon gets reduced. Thus, the short-term forecasts are revised, reflecting the absorption of the latest available information. In general, the one quarter ahead forecast tend to converge to the actual numbers. The chart further suggests that till the end of the financial year 2010-11, the median forecast underestimated the actual outturns as shown by the positive values of the error, while from 2011-12 onwards, the median forecast errors turned out to be negative, *i.e.*, forecasts are overestimated in the later period.

To assess the growth forecast performance, the Root Mean Square Error (RMSE) based on median forecast has been calculated from Q1:2010-11 to Q1:2013-14 (Table 5). As expected, the RMSE towards

Table 5: RMSE of GDP growth Forecast											
Forecast Horizon (in quarter) \rightarrow Period \downarrow	4- quarter ahead	3- quarter ahead	2- quarter ahead	1- quarter ahead							
Q1:2010-11 to Q1:2013-14 Q2:2011-12 to Q1:2012-13 Q2:2012-13 to Q1:2013-14	2.3 2.7 2.6	2.1 2.4 2.2	1.7 2.0 1.8	1.3 1.6 1.1							

the end of the period has been found to be higher. The RMSE for Q2:2012-13 to Q1:2013-14 for different forecast horizon has been found to be lower than the period from Q2:2011-12 to Q1:2012-13, suggesting relative improvement in the forecast performance in the later period.

7. Performance of Quarterly WPI Headline Inflation Forecast

Regarding the forecast of WPI headline inflation, it has also been observed that the median forecast performance improves as the forecast horizon gets shorter (Chart 8). Median forecast error for WPI headline inflation was found to be more till Q2:2011-12 and henceforth started declining gradually till Q4:2012-13. The recent period has shown some increase in forecast error.

Table 6: 1	RMSE of	WPI	inf	lation 1	Forecas	t

Q1:2010-11 to Q2:2013-142.62.21.8Q3:2011-12 to Q2:2012-131.31.30.8	Forecast Horizon \rightarrow Period \downarrow	4- quarter ahead	3- quarter ahead	2- quarter ahead	1- quarter ahead
O3:2012-13 to O2:2013-14 1.1 1.2 1.1	Q1:2010-11 to Q2:2013-14	2.6	2.2	1.8	1.2
	Q3:2011-12 to Q2:2012-13	1.3	1.3	0.8	0.6
	Q3:2012-13 to Q2:2013-14	1.1	1.2	1.1	1.1



8. Variability of Forecasts

Variability of the forecast was also examined using box plots. Chart 9 present the box plot of one quarter ahead forecast of quarterly GDP growth. The thick line represents the actual growth. The boxes are plotted against the reference survey quarter, while growth is plotted one period ahead. Thus in the Chart, the last point indicates that the survey was conducted in March



2013, while the GDP growth is for the quarter April-June 2013. Box plot for quarterly growth forecast suggests that for most of the time, the actual outturn of GDP growth lies within the maximum and minimum forecast, except in particularly for March 2012 and December 2012 rounds.

Chart 10 and Chart 11 present the box plot of one quarter ahead forecast of WPI headline inflation and







Box plot for WPI headline inflation forecast suggests that for most of the time, the actual outturn of WPI inflation lies within the maximum and minimum forecast except for the last two rounds. The forecasts for WPI Manufactured Products inflation are found to be encouraging with the actual data is found to be inside the maximum-minimum limit, with exception for June 2012 round. The Box plot for CPI Industrial Workers also suggests that, except for March 2012 and December 2012 round, the actual observed data lies within the maximum-minimum limit (Chart 12).

9. Forecast based on Weighted Average

As observed outturns have mostly lied within the maximum-minimum limit of the forecasts, an alternative methodology of aggregation of forecasts has been proposed. It is derived as the weighted



average of the forecasts, where weight for each forecaster is assigned based on the past errors for different forecast horizon. Accordingly, the weight for the ith forecaster for time't', with forecast horizon 'h', is defined as,

$$w_{it}(h) = \frac{(\frac{1}{m_{it}h})}{\sum_{i=1}^{p}(\frac{1}{m_{it}h})}$$

with $m_{it}{}^{h}$ is the error square committed by the ith forecaster for time 't' with forecast horizon 'h' and is defined as,

$$m_{it}^{h} = \frac{1}{k} \sum_{j=1}^{k} (A_{t-j} - F_{i,t-j}^{h})^{2}$$

Where F_{it}^{h} is the forecast by the ith forecaster for time 't' with forecast horizon 'h'. A_t is the observed data for time 't'.

9.1. Forecast based on weighted average for Quarterly GDP Growth

Table 7 presents the RMSE for forecasts of quarterly GDP growth with forecast horizon of 4-quarter, 3-quarter, 2-quarter and 1-quarter ahead for the period from Q2:2012-13 to Q1:2013-14. The empirical findings

Table /: Koot Mean Square of Error of Quarterly GDP growth Porecasts										
Inflation	4-quarter ahead		3-quarter ahead		2-quarter	ahead	1-quarter ahead			
	Median	WA	Median	WA	Median	WA	Median	WA		
GDP growth	7.00	6.25	5.29	3.88	3.06	2.60	1.30	0.96		

Table 7: Root Mean Square	of Error of	Ouarterly GDP	growth Forecasts
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WA: Weighted Average method

suggest that the RMSE of the weighted average method is lower than the median forecast for different forecast horizon.

The RMSE of GDP growth forecast with a forecast horizon of 4-quarters, based on the weighted average method is estimated to be 6.25, which is lower than the median based forecast RMSE of 7.00. Similarly, with a forecast horizon of 3-quarters, the RMSE based on weighted average method is found to be lower at 3.88 compared to the median based forecast of 5.29.

9. 2. Forecast based on Weighted Average for Quarterly Inflation

Table 8 presents the RMSE for forecasts of WPI headline inflation, WPI Manufactured Products inflation and CPI-IW headline inflation with forecast horizon of 4-quarter, 3-quarter, 2-quarter and 1-quarter ahead for the period from Q3:2012-13 to Q2:2013-14. The empirical findings suggest that the RMSE of the weighted average method is lower than the median forecast for different forecast horizon.

The RMSE of WPI headline inflation forecast with a forecast horizon of 4-quarters, based on the weighted average method is estimated to be 0.85, which is lower than the median based forecast RMSE of 1.18. Similarly, with a forecast horizon of 3-quarters, the RMSE based on weighted average method is found to be lower at 1.11 compared to the median based RMSE of 1.46. Again, the RMSE of WPI Manufactured Products inflation based on the weighted average method is found to be 3.05 for a forecast horizon of 4-quarter, which is lower than the median based RMSE of 3.75. Similarly for a forecast horizon of 1-quarter, the RMSE of weighted average method is estimated to be lower at 0.10 compared to 0.30 for median based forecast.

Also, the estimated RMSE based on the weighted average method of CPI-IW inflation was lower than the median based forecast. For forecast horizon of 4-quarters, the RMSE of the proposed method is estimated at 5.90 compared to 8.59 for the median based forecast. Similarly for 1-quarter ahead forecast, the RMSE of the median forecast is higher at 1.32 compared to 0.56 of the weighted average method.

9. 2. Forecast based on Weighted Average for Annual GDP growth

Annual forecast of GDP growth are provided from the first quarter of the previous financial year to the last quarter of the current financial year. Thus, GDP growth forecast for a particular year is projected eight times. However, in this article analysis has been restricted to the last five forecasts of the annual GDP growth.

Table 8: Not Mean square of Enor of Quarterly initiation Porecasts										
Inflation	4-quarter ahead		3-quarter	r ahead	2-quarter	ahead	1-quarter ahead			
	Median	WA	Median	WA	Median	WA	Median	WA		
WPI Headline Inflation	1.18	0.85	1.46	1.11	1.26	1.02	1.29	1.09		
WPI Manufactured Products	3.75	3.05	6.42	5.76	1.91	1.29	0.30	0.10		
CPI Industrial Workers	8.59	5.90	4.90	2.89	1.62	0.66	1.32	0.56		

Table 8: Root Mean Square of Error of Quarterly Inflation Forecasts

WA: Weighted Average method

Table 9: Root Mean Square of Error of Annual GDP growth forecast											
RMSE	5-quarter ahead		4-quarter ahead		3-quarter ahead		2-quarter ahead		1-quarter ahead		
	Med	WA									
2011-12 (AE) & 2012-13	3.93	3.13	3.40	2.85	1.63	1.35	0.56	0.42	0.13	0.08	
2011-12 (RE) & 2012-13	4.42	3.81	4.04	3.45	2.11	1.83	0.92	0.78	0.25	0.16	
2011-12 (2nd RE) & 2012-13	5.29	4.00	4.63	4.00	2.57	2.29	1.30	1.16	0.45	0.33	

Table 9: Root Mean Square of Error of Annual GDP growth forecast

Med: Median; WA: Weighted Average method

Table 9 presents the RMSE of annual GDP growth for forecast horizon of 5-quarter to 1-quarter for the two financial years 2011-12 and 2012-13. Here again, the RMSE based on the weighted average method was found to be lower than median estimates for all the forecast horizons.

For the year 2011-12, the official estimates of growth were revised by the Central Statistics Office (CSO) with the incorporation of the new information. As per the advance estimate released on February 7, 2012, the CSO put the growth at 6.9 per cent, which was revised down to 6.5 percent as per the revised estimate released on May 31, 2012. As per the latest available data, the growth for 2011-12 has been further revised down to 6.2 per cent. For the year 2012-13, the CSO has put both advance estimate and revised estimate at 5 per cent. It is observed that the RMSE of forecasts of both the methods increases with the revisions of the data. The error in forecasts of GDP is least when compared with the advance estimate. The median based RMSE for 5-quarter ahead forecast, with the advance estimate of 2011-12, was estimated at 3.93. increased to 4.42 based on the revised estimate, which further increased to 5.29 with the 2nd revised estimate. Similarly, based on the weighted average method for the same forecast horizon, estimated RMSE for advance estimate was 3.13, which increased to 3.81 as per the revised estimate and increased further to 4.00 as per the second revised estimate. Based on the latest available estimate (2011-12 (2^{nd} RE) & 2012-13), the 5-quarter ahead RMSE based on the weighted average method is lower at 4.00 compared to 5.29 for median based forecast.

9. Conclusion

This article presents the trend in forecasts based on the Survey of Professional Forecasters conducted by the Reserve Bank. The recent survey results indicate a lower growth for India in 2013-14 and possible improvement in 2014-15. Inflation pressure from both WPI and CPI-IW is likely to continue till 2013-14. Further, growth outlook for the next five years and 10 years has fallen in the recent survey. For the next five and 10 years, the forecasters expect a fall in the WPI inflation, while CPI-IW inflation is expected to go up for the same period. Also, the implicit forecast of growth, estimated from the probability distribution is found to be consistent with the explicit growth forecast, suggesting the internal consistency of the projections made by the forecasters. As an alternative to the median forecast, a weighted average method of aggregation, with weights given to each forecaster based on past accuracy, was carried out for quarterly growth and inflation and annual growth forecast. The forecast performance based on the proposed weighted average method was found to be superior than the median based forecasts.