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The Wall Street Journal 2001 Forecasting Survey: A Deconstruction

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Each time we review the *Wall Street Journal's* semiannual survey of economists' forecasts, we ask ourselves if there is a simple way to summarize the results and to extract a consensus forecast. From this extraction, we could then determine when an individual forecast is significantly different from that of the consensus. If we could accomplish this, we could then better understand each forecast separately and value it accordingly (perhaps "value" is an inappropriate word—who are we to value another economist's forecast, particularly among this group—let's say we will be able to "assess" their forecasts accordingly).

The Consensus Forecast

The individual forecasts are all over the lot. In what follows we assume that each forecast contains some information unique to the forecaster. We also assume the forecasts are contaminated by noise. Viewed this way we face a classic signal-extraction problem. And a good first step in developing a consensus forecast is to average each of the individual forecasts. As the number of forecasts increases, the random variation of individual forecasts around the "true" or consensus forecast is eliminated. As long as the forecasts are not perfectly correlated (and trust me, they are not), adding an additional forecast reduces the standard error of the sample mean and increases the information contained in the average figures.

The average is reported in Table 1. Comparing the most recent economic numbers to the average of the forecasts gives some insights into the overall picture painted by the "consensus" forecast. Looking at the numbers, the story is fairly straightforward: On average, the group expects a decline of 54 basis points on the short end of the yield curve, while only a 15 basis points drop is expected on the long end. Therefore, taken at face value, the consensus calls for a flat yield curve.

The Consensus Forecasts							
Table 1							
	<i>T-Bill</i>	<i>T-Bond</i>	<i>GDP</i>	<i>CPI</i>	<i>YEN</i>	<i>EURO</i>	<i>Unemp.</i>
Average Forecast	5.36	5.35	2.5	2.8	113	0.95	4.4
Actual	5.9	5.5	4.2	3.4	114	0.94	4
Difference Between Average and Actual	-0.54	-0.15	-1.72	-0.60	-0.88	1.06	0.40
Standard Deviation of the Individual Forecasts	0.376	0.304	1.108	0.374	4.680	5.068	0.189

Comparing the consensus real GDP forecast for the next three quarters to the economic performance during the past three quarters, these economists are forecasting a positive but much lower rate of economic expansion, with an increase in growth occurring as the year progresses. They are also calling for lower inflation during the year—seeing a decline in the inflation rate of 60 basis points.

Since the expected reduction in inflation is greater than the forecast reduction in interest rates, the real rate is expected to rise. The rising real rate of return is consistent with the forecast of a steady increase in the real GDP growth rate as the year progresses.

The most intriguing part of the forecast is in the international arena. The exchange rate forecast measures the expected relative performance between the dollar and either the yen or the euro. The consensus is that the dollar will appreciate against the yen and

depreciate against the euro. The divergence in the forecasts leads one to conclude that the economists are implicitly forecasting the outlook for Euroland and Japan in their currency forecast. In short, these economists are bullish on Euroland and bearish on Japan.

Significance of Individual Forecasts in Relation to the Consensus

Looking at individual forecasts, there appears to be great deal of variation among the economists participating in the survey. Within the context of our framework, the differences between the individual forecasts and the consensus contain two distinct types of information. One is random noise, and the other is the difference between the individual forecast and the consensus. Since we assume the noise is random, we can use the standard deviation measure to calculate confidence intervals and significance levels of individual forecasts compared to the average.

In Table 1 we report the standard deviation of the differences in the forecasts from the mean. In an attempt to be succinct, we have adopted a simple convention. We use the 5% significance level to determine whether a forecast is significantly different from the mean of the economists' forecasts. Thus, a forecast is only considered to be significant if the difference between the forecast and the consensus is greater than twice the standard deviation of the consensus forecast.

There were 54 panelists who participated in the survey. Each panelist was asked to make 10 forecasts; hence we have 540 separate forecasts. Under the null hypothesis of a normal distribution and assuming the forecasts are independent of each other, we would expect that out of 540 "random" drawings we would get 5%, or 27 observations, that we would consider significantly different from the mean forecast. Well, we got 31. Nevertheless, the results are quite close to the expected result under the "random" null hypothesis. This result leads us to

conclude that, on average, the economists' individual forecasts are not statistically different from that of the consensus. Alternatively stated, once the consensus is calculated, the individual forecasts add little or no additional information. Collectively, the value of the forecast is in what they contribute to the consensus, but there is little individual value.

A corollary to the conclusion that the individual forecasts are not significantly different than the consensus is that the selection of the top forecaster for any given quarter is more than likely a result of luck than to the true acumen of the forecaster.

How to Identify a Superior Forecaster?

The problem with selecting the top forecaster is analogous to selecting a top portfolio manager for a given quarter based on performance. If one chooses the hot hand and chases performance, there is no guarantee that superior results will be obtained. The reason is very simple. Is the ranking luck or skill?

If the manager or economist has superior information we should expect him or her to be consistently above average. However, that doesn't preclude some random event propelling a lower quality forecaster to outperform in any one period. To solve this problem, we utilize the statistical technique of sampling. More than one observation is needed to establish the quality of the forecast. As the number of observations increases, the noise surrounding the accuracy of the forecast disappears. We know very well that a manager who ranks slightly above average "every" year will also rank high on the five- and ten-year charts.

The same should hold true for forecasters. Looking at their track records is a way to "average" out random fluctuations and obtain information on their true forecasting ability. Borrowing a page from the investment consultants, investors need to develop alternative measures that help determine the likelihood of success, such as style and style consistency. The style is

important because it helps develop some decision rules as to how different environments favor different styles. In turn, style consistency ensures that when a particular economic environment materializes, the expected style performance will be there. Within this framework, style consistency is of the utmost importance. For only if a manager stays within his or her style will an asset allocation process maximize returns or minimize risks. A manager that violates his or her style may be able to increase returns, but in so doing could increase overall portfolio risk.

The analogy is very appropriate for money managers hiring economists. If measuring true forecasting ability is a hard process, as we've argued, then evaluating an economist would take several forecasting periods. The investment manager may be well served by focusing on analysis consistency.

Comparing the various styles or persuasions, the manager will be able to identify issues at the margin. Also, based on experience, the manager may be able to determine which style works best for each environment. Using the asset allocation/style analogy. A consensus economic forecast could be easily built by "averaging" the various economic forecasts. In this case, style consistency is of the utmost importance. In some cases this becomes more important than the forecast, for it is the consistency of the style that allows managers to filter the information and adjust the analysis to their views.

Investors need a Keynesian, a monetarist, a supply-sider, etc., to evaluate, and in this way be able to compare and contrast the insights of the different views/styles.

How to Identify a Forecaster Style

To aid our interpretation of the consistency of the different sets of forecasts, we have found a way to summarize some key relationships that characterize the theoretical underpinnings of the various forecasts.

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The first step in our characterization is to identify the nature of the shock implicit in the economists' forecasts. For example, an aggregate demand shock will lead to higher output and higher interest rates. Hence, under an aggregate demand shock we should observe a positive relationship between the rate of change in real GDP growth and the change in interest rates. A negative correlation between the two variables implies an aggregate supply shock. Thus, looking at the correlation between the two variables in the economists' forecasts, one can determine whether they are forecasting a demand shock or a supply shock.

The Phillips curve postulates a positive relationship between inflation and unemployment. Hence, looking at the inflation and unemployment forecasts, one can determine whether the forecaster has built a Keynesian/Phillips curve into his model. As a practical matter we only looked at absolute values in excess of 0.1 in calculating the correlations.

The final characterization is the relationship between inflation and T-bill yields. If monetary shocks are the major sources of disturbances, inflation expectations will be a major source of variation in nominal yields. In which case we should observe a positive correlation between inflation and nominal interest rates. On the other hand, if real disturbances are the major source of interest rate fluctuations, a negative correlation between inflation and T-bill yields will be observed. A related implication is something that we have said many times before. Currency movements can be attributed to two factors: relative inflation rates or relative rates of returns. We have argued that when PPP is the relevant framework, currency movements reflect relative inflation rates. Hence we would expect to see a negative correlation between interest rates and exchange rates. On the other hand, when PPP is violated and the real exchange rate is the dominant force a positive correlation is then observed.

Is There Any Forecaster-Specific Information?

We just made the case that the bulk of the individual forecasts are not statistically different from the average of the individual forecasts. The outliers may provide an opportunity to evaluate the true forecasting record of the individual economists. Economists have a particular view of the world, meaning that their individual forecasts may not be totally independent of each other. Thus, if we are willing to look at their forecasts as a package, the outliers (greater than a two-sigma difference) here have the potential of having an insight truly different from the consensus. This process reduces the list to 16 forecasters worthy of consideration.

The list of economists whose forecasts are the most likely to be significantly different from the consensus is reported in Table 2. The numbers in the columns represent the difference between the economist's forecasts and the average or consensus forecast. The number in bold represent the forecast that we have identified as two-sigma events. A number of forecasters differ from the consensus in that they made one different forecast. The single outlier makes it difficult to identify any consistency in the economists' forecasts. To aid in our interpretation of the consistency of the forecasts, we have also looked at the relationship among the individual forecasts. The last three columns describe the economic relationships built into their model. These include the nature of the shock, whether interest rates are driven by real or monetary factors, and whether a Phillips curve is built into their model.

Gary Shilling of Shilling & Co. takes the honors as the forecast with the most outliers. The Shilling model is a Keynesian-based Phillips curve where nominal interest rates are driven by inflationary expectations. The model assumes a large negative aggregate demand shock. Given the structure of the model and the

nature of the shock, the forecast of lower output, inflation, interest rates and a higher unemployment rate than the consensus immediately follow.

Five forecasts are based on Keynesian models, where nominal rates are driven by monetary disturbances just as in the Shilling model. However, unlike Shilling, these five economists are forecasting an aggregate supply shock. In relation to the consensus, the three of the economists—Laufenburg, Synott and Swonk—are forecasting above average growth and thus project the unemployment rate to decline. In Laufenburg's case the supply-led growth will result in higher long-term yields. The two economic groups forecasting a negative supply shock within this group are Lazar/Hyman and Smith. We found it troubling that even though Smith calls for slower growth, he projects an unemployment rate below and a T-bill yield above the consensus.

The next group of forecasts consists of two Keynesian-based models in which the real rate is the main driving force behind interest rates changes. Both Kurt Karl and Richard Yamarone forecast a positive aggregate demand shock. So they both forecast a lower than average unemployment rate. In Yamarone's case the rise in short-term real rates result in an above average forecast for higher interest rates and a higher foreign exchange value of the dollar.

The remaining forecasts don't embody a Phillips curve type of relationship. Four of the forecasts assume that interest rates are driven by real rates of returns. Two forecasters—William Dudley and Tracy Herrick—are forecasting a negative aggregate demand shock. Hence their forecasts are below average across the board. Two other groups—David Littman and R. Berner/D. Greenlaw—forecast a positive aggregate supply shock. Thus their model projects higher than average growth, lower real rates, and a deteriorating dollar.

The remaining three forecasters have models in which nominal interest rates are driven by monetary shocks. Lawrence

Forecasters Who Differ From the Consensus										
Table 2										
	T-Bill	T-Bond	GDP	CPI	YEN	EURO	Unemp.	Shock	Interest	Phillips
Gail Foster, Conference Board	1.0	0.6	1.3	0.7	2.6	11.7	-0.1	AD	N	
Daniel E. Laufenburg, American Express	0.1	-0.1	1.3	-0.2	-1.8	-1.1	-0.5	AS	N	K
Kurt Karl, Swiss Re	0.1	-0.1	1.3	-0.2	-1.8	-1.1	-0.5	AD	R	K
Thomas W. Synott III, U.S.	0.1	0.7	0.4	0.6	-3.5	-1.1	-0.2	AS	N	K
Diane C. Swonk, Bank One	0.0	0.4	1.4	0.1	0.0	2.1	-0.5	AS	N	K
N. Lazar/Ed Hyman, ISI Group	-0.2	0.0	-1.0	-0.6	0.9	-3.2	0.4	AS	N	K
David L. Littman, Comerica Bank	-0.8	0.0	0.5	0.6	4.4	-11.7	0.0	AS	R	
William Dudley, Goldman Sachs	-0.5	-0.1	-0.1	0.1	-14.9	-11.7	-0.1	AD	R	
James F. Smith, Univ. of North Carolina	0.7	-0.1	-1.4	0.4	11.4	8.5	-0.2	AS	N	K
Tracy Herrick, Jeffries & Co.	-0.1	-0.4	-3.5	1.0	-12.3	-8.5	0.0	AD	R	
Lawrence Kudlow, ING Barings	-0.4	-0.6	-0.3	-0.3	5.3	6.4	0.1	AD	N	
R. Berner/D. Greenlaw, Morgan Stanley	-0.1	-0.3	0.4	0.1	-10.5	-6.4	0.1	AS	R	
A. Gary Shilling, Morgan Stanley	-1.1	-0.9	-5.3	-0.9	3.5	4.3	0.6	AD	N	K
John McDevitt, 3M	N/A	0.7	0.2	0.0	-0.9	-6.4	0.0	AD	N	
Richard Yamarone, Argus Research	0.5	0.2	0.9	-0.8	0.9	10.6	-0.2	AD	N	K

Kudlow is the only one with a classical model and thus is the one model/forecast different from the pack, both theoretically and quantitatively. Larry's forecast is driven by his belief that rates will decline, which, in turn, will result in lower real GDP growth. The other two—Gail Fosler and John McDevitt- have Keynesian-like

forecasts. They are both looking for stronger growth, and higher inflation and higher interest rates than the average.

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