

Table 1: Software Ratings* by Data Preparation Principles**

Software Category	Software Program	Methods Offered	Principles*					Fraction of Maximum Possible Rating	
			Examining whether series is forecastable	Cleaning the data (errors, missing values, outliers)	Adjusting for seasonality and trading days	Transforming the data	Plotting cleansed, transformed and deseasonalized data		
			1.4*	5.1, 5.3	5.4	5.2	5.7		
Spreadsheet Add-Ins	CB Predictor	REG, XS	o	o	o	o	o	0.00	Spreadsheet Add-Ins
	Excel DAT	REG, XS	o	o	o	o	o	0.00	
	Insight.xla	REG, XS	o	o	o	o	o	0.00	
Forecasting Modules of Statistical Programs	Minitab	BJ, DC, REG, XS	+	+	+	++	+	0.60	General Statistics
	SAS/ETS	BJ, DC, ECM, REG, XS	+	+	++	++	++	0.80	
	Soritec	BJ, DC, ECM, REG, XS	o	o	++	+	++	0.50	
	SPSS Trends	BJ, DC, REG, XS	o	++	++	++	+	0.70	
Neural Network Programs	NeuroShell Predictor	NN	o	+	++	+	++	0.60	Neural Nets
	NeuroShell Professional Time Series	NN	+	+	++	+	++	0.70	
	SPSS Neural Connection	NN	o	o	o	o	o	0.00	
Dedicated Business-Forecasting Programs	Autobox	BJ, HIER, ID, XS	+	++	+	++	o	0.60	Business Forecasting
	Forecast Pro	BJ, DC, HIER, ID, REG, XS	+	++	+	++	+	0.70	
	SmartForecasts	DC, HIER, ID, REG, XS	+	++	+	++	++	0.80	
	Time Series Expert	BJ, DC, ECM, REG, XS	o	o	++	++	+	0.50	
	tsMetrix	BJ, NN, REG, XS	o	+	+	++	++	0.60	
Fraction of Maximum Possible Rating			0.20	0.43	0.57	0.63	0.53	0.47	

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 REG: Regression
 XS: Exponential Smoothing

Table 2: Software Ratings*** by Method Selection Principles

Software Category	Software Program	Methods Offered	Principles*					Including dynamic terms in causal model	swf**	Fraction of Maximum Possible Rating	
			Matching forecasting method to the data	Selecting methods based on comparison of track records	Discouraging needless complexity	Considering out-of-sample performance in method selection	Combining forecasts - formal procedure				
			6.7*	6.8	6.6	9.3	12.3				
Spreadsheet Add-Ins	CB Predictor	REG, XS	+	++	o	o	o	o	0.25	Spreadsheet	
	Excel DAT	REG, XS	o	o	o	o	o	o	0.00	Add-Ins	
	Insight.xla	REG, XS	+	o	o	o	o	o	0.08	0.11	
Forecasting Modules of Statistical Programs	Minitab	BJ, DC, REG, XS	+	o	o	o	o	+	0.17	General Statistics	
	SAS/ETS	BJ, DC, ECM, REG, XS	++	++	+	++	++	++	0.92		
	Soritec	BJ, DC, ECM, REG, XS	o	o	o	o	o	+	0.08		
	SPSS Trends	BJ, DC, REG, XS	o	o	o	o	o	o	0.00		0.29
Neural Network Programs	NeuroShell Predictor	NN	+	++	++	++	o	o	0.58	Neural Nets	
	NeuroShell Professional Time Series	NN	+	++	+	++	++	o	0.67		
	SPSS Neural Connection	NN	o	o	++	++	++	o	0.50		0.58
Dedicated Business-Forecasting Programs	Autobox	BJ, HIER, ID, XS	++	++	++	++	+	++	0.92	Business Forecasting	
	Forecast Pro	BJ, DC, HIER, ID, REG, XS	+	++	++	++	o	++	0.75		
	SmartForecasts	DC, HIER, ID, REG, XS	+	++	+	++	o	+	0.58		
	Time Series Expert	BJ, DC, ECM, REG, XS	++	++	+	++	o	+	0.67		
	tsMetrix	BJ, NN, REG, XS	+	o	o	o	o	++	0.25		0.63
Fraction of Maximum Possible Rating			0.47	0.53	0.40	0.53	0.23	0.40		0.43	

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Table 3: Software Ratings* by Method Implementation Principles**

Software Category	Software Program	Methods Offered	Principles*							Fraction of Maximum Possible Rating	
			Selecting fit vs. test period	Choosing best-fit criterion	Adjusting for expected events	Weighting the most relevant data more heavily	Allowing user to integrate judgment	Overriding statistical forecasts	Integrating forecasts of explanatory variables into causal model		
			swf**	swf	7.5*	9.4	11.3	swf	10.8		
Spreadsheet Add-Ins	CB Predictor	REG, XS	+	o	o	+	+	o	++	0.36	Spreadsheet Add-Ins
	Excel DAT	REG, XS	o	o	o	o	o	o	o	0.00	
	Insight.xla	REG, XS	++	o	o	+	o	o	o	0.21	
Forecasting Modules of Statistical Programs	Minitab	BJ, DC, REG, XS	++	o	+	+	+	o	+	0.43	General Statistics
	SAS/ETS	BJ, DC, ECM, REG, XS	++	++	++	++	++	+	++	0.93	
	Soritec	BJ, DC, ECM, REG, XS	+	o	o	++	o	o	o	0.21	
Neural Network Programs	SPSS Trends	BJ, DC, REG, XS	+	o	o	++	o	o	o	0.21	0.45
	NeuroShell Predictor	NN	++	+	o	+	o	o	+	0.36	
	NeuroShell Professional Time Series	NN	+	+	o	+	++	++	+	0.57	
Dedicated Business-Forecasting Programs	SPSS Neural Connection	NN	++	++	o	+	+	o	++	0.57	0.50
	Autobox	BJ, HIER, ID, XS	++	o	++	++	o	o	++	0.57	
	Forecast Pro	BJ, DC, HIER, ID, REG, XS	++	o	++	++	+	++	o	0.64	
Business-Forecasting Programs	SmartForecasts	DC, HIER, ID, REG, XS	+	o	++	+	++	++	++	0.71	Business Forecasting
	Time Series Expert	BJ, DC, ECM, REG, XS	+	o	++	++	o	o	o	0.36	
	tsMetrix	BJ, NN, REG, XS	++	o	o	o	o	o	o	0.14	
Fraction of Maximum Possible Rating			0.73	0.20	0.37	0.63	0.33	0.23	0.43	0.42	

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Table 4: Software Ratings* by Method Evaluation Principles**

Software Category	Software Program	Methods Offered	Principles*					Fraction of Maximum Possible Rating	
			Testing validity of model assumptions	Distinguishing within-sample from out-of-sample forecasting accuracy	Providing multiple measures of accuracy	Providing error measures that adjust for scale and outliers	Measuring errors by forecast horizon		
			13.2*	13.26	13.25	13.20, 13.24	13.4		
Spreadsheet Add-Ins	CB Predictor	REG, XS	+	o	+	+	o	0.30	Spreadsheet
	Excel DAT	REG, XS	+(REG) - (XS)	o	o	o	o	0.00	Add-Ins
	Insight.xla	REG, XS	o	+	o	o	o	0.10	0.13
Forecasting Modules of Statistical Programs	Minitab	BJ, DC, REG, XS	+	o	++	+	o	0.40	General Statistics
	SAS/ETS	BJ, DC, ECM, REG, XS	++	++	++	+	o	0.70	
	Soritec	BJ, DC, ECM, REG, XS	++	o	+	+	o	0.40	
	SPSS Trends	BJ, DC, REG, XS	+	+	o	o	o	0.20	0.43
Neural Network Programs	NeuroShell Predictor	NN	-	++	+	o	o	0.20	Neural Nets
	NeuroShell Professional Time Series	NN	+	++	++	+	+	0.70	
	SPSS Neural Connection	NN	o	+	++	o	o	0.30	
Dedicated Business-Forecasting Programs	Autobox	BJ, HIER, ID, XS	++	++	++	++	++	1.00	Business Forecasting
	Forecast Pro	BJ, DC, HIER, ID, REG, XS	++	++	++	++	++	1.00	
	SmartForecasts	DC, HIER, ID, REG, XS	+	+	++	+	++	0.70	
	Time Series Expert	BJ, DC, ECM, REG, XS	++	+	++	+	o	0.60	
	tsMetric	BJ, NN, REG, XS	++	++	++	++	++	1.00	
		Fraction of Maximum Possible Rating	0.53	0.57	0.70	0.43	0.30		0.51

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Table 5 : Software Ratings* by Assessment of Uncertainty Principles**

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Software Category	Software Program	Methods Offered	Principles*				Fraction of Maximum Possible Rating	
			Providing objective prediction intervals 14.1*, 14.2	Developing prediction intervals from ex ante forecast errors 14.3	Specifying sources of uncertainty 14.6, 14.13	Combining prediction intervals from alternative methods 14.9		
Spreadsheet Add-Ins	CB Predictor	REG, XS	+	+	-	+	0.25	Spreadsheet
	Excel DAT	REG, XS	+	o	-	o	0.00	Add-Ins
	Insight.xla	REG, XS	+	+	+	o	0.38	0.21
Forecasting Modules of Statistical Programs	Minitab	BJ, DC, REG, XS	++	+	o	o	0.38	General Statistics
	SAS/ETS	BJ, DC, ECM, REG, XS	++	+	+	o	0.50	
	Soritec	BJ, DC, ECM, REG, XS	+	o	o	o	0.13	
	SPSS Trends	BJ, DC, REG, XS	+	o	o	o	0.13	
Neural Network Programs	NeuroShell Predictor	NN	o	o	o	o	0.00	Neural Nets
	NeuroShell Professional Time Series	NN	o	o	o	o	0.00	
	SPSS Neural Connection	NN	o	o	o	o	0.00	
Dedicated Business-Forecasting Programs	Autobox	BJ, HIER, ID, XS	++	o	+	+	0.50	Business Forecasting
	Forecast Pro	BJ, DC, HIER, ID, REG, XS	++	+	o	o	0.38	
	SmartForecasts	DC, HIER, ID, REG, XS	+	++	o	o	0.38	
	Time Series Expert	BJ, DC, ECM, REG, XS	++	o	o	o	0.25	
	tsMetrix	BJ, NN, REG, XS	+	+	-	o	0.13	
Fraction of Maximum Possible Rating			0.57	0.27	0.00	0.07	0.23	

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Table 6: Software Ratings* by Forecast Presentation Principles**

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Software Category	Software Program	Methods Offered	Principles*						Fraction of Maximum Possible Rating	
			Transparency in theoretical assumptions made	Explaining methodology	Illustrating how forecasts were generated	Graphically presenting point and interval forecasts	Providing forecasts in exportable formats	Forecast report		
			15.3*	15.2	15.2	15.4	swf**	swf		
Spreadsheet Add-Ins	CB Predictor	REG, XS	o	o	o	++	++	+	0.42	Spreadsheet
	Excel DAT	REG, XS	o	o	o	o	++	o	0.17	Add-Ins
	Insight.xla	REG, XS	o	o	+	+	++	o	0.33	0.31
Forecasting Modules of Statistical Programs	Minitab	BJ, DC, REG, XS	o	+	++	++	++	o	0.58	General Statistics
	SAS/ETS	BJ, DC, ECM, REG, XS	++	++	+	++	++	o	0.75	
	Soritec	BJ, DC, ECM, REG, XS	o	o	o	+	+	o	0.17	
	SPSS Trends	BJ, DC, REG, XS	o	o	+	+	+	o	0.25	0.44
Neural Network Programs	NeuroShell Predictor	NN	o	o	+	+	++	o	0.33	Neural Nets
	NeuroShell Professional Time Series	NN	+	++	+	+	++	o	0.58	
	SPSS Neural Connection	NN	o	o	+	+	+	o	0.25	
Dedicated Business-Forecasting Programs	Autobox	BJ, HIER, ID, XS	+	++	+	++	++	++	0.83	Business Forecasting
	Forecast Pro	BJ, DC, HIER, ID, REG, XS	+	++	+	++	++	+	0.75	
	SmartForecasts	DC, HIER, ID, REG, XS	+	++	+	++	++	++	0.83	
	Time Series Expert	BJ, DC, ECM, REG, XS	+	++	o	++	+	o	0.50	
	tsMetrix	BJ, NN, REG, XS	o	o	+	++	++	+	0.50	
Fraction of Maximum Possible Rating			0.23	0.43	0.40	0.73	0.87	0.23	0.48	

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Table 7: Software Ratings*** by Product Hierarchy Principles

Software Program	Edition	Methods Offered	Principles*							Fraction of Maximum Possible Rating	Product Hierarchy Software
			Automatic method selection	Multiple procedures for reconciliation	Adjustments for special events	Procedures for intermittent demands	Identify problem forecasts for manual review	Automatic reconciliation of judgmental overrides	Facilitate comparison of forecasting and reconciliation approaches		
			swf**	swf	swf	swf	swf	swf	swf		
Autobox	Version 5	BJ, ID	++	+	++	++	o	o	+	0.57	Product Hierarchy Software
Forecast Pro	Unlimited	XS, ID	++	++	++	++	o	++	+	0.79	
SmartForecasts	Unlimited Batch	XS, ID	++	+	++	++	++	++	+	0.86	
Fraction of Maximum Possible Rating			1.00	0.67	1.00	1.00	0.33	0.67	0.50	0.74	

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Table 8: Summary Ratings by Program and Category

	Fraction of Maximum Possible Rating in Tables 1-6
Spreadsheet Add-Ins	0.16
CB Predictor	0.26
Excel DAT	0.03
Insight.xla	0.18
Forecasting Modules of Statistical Programs	0.42
Minitab	0.43
SAS/ ETS	0.77
Soritec for W 95/NT	0.25
SPSS Trends	0.25
Neural Network Programs	0.38
NeuroShell Predictor	0.35
NeuroShell Professional Time Series	0.54
SPSS Neural Connection	0.27
Dedicated Business-Forecasting Programs	0.60
Autobox	0.74
Forecast Pro	0.70
SmartForecasts	0.67
Time Series Expert	0.48
tsMetrix	0.44

Table 9: Summary Ratings by Forecasting Principle

	Fraction of Maximum Possible Rating
<u>Data Preparation</u>	0.47
· Examining whether series is forecastable	0.20
· Cleaning the data (errors, missing values, outliers)	0.43
· Adjusting for seasonality and trading days	0.57
· Transforming the data	0.63
· Plotting cleansed, transformed and deseasonalized data	0.53
<u>Method Selection</u>	0.43
· Matching forecasting method to the data	0.47
· Selecting methods based on comparison of track records	0.53
· Discouraging needless complexity	0.40
· Considering out-of-sample performance in method selection	0.53
· Combining forecasts - formal procedure	0.23
· Including dynamic terms in causal model	
<u>Method Implementation</u>	0.42
· Selecting fit vs. test period	0.73
· Choosing best-fit criterion	0.20
· Adjusting for expected events	0.37
· Weighting the most relevant data more heavily	0.63
· Allowing user to integrate judgment?	0.33
· Overriding statistical forecasts	0.23
· Integrating forecasts of explanatory variables into causal model	0.43
<u>Method Evaluation</u>	0.51
· Testing validity of model assumptions	0.53
· Distinguishing in-sample from out-of-sample fcst accuracy	0.57
· Providing multiple measures of accuracy	0.70
· Providing error measures that adjust for scale and outliers	0.43
· Measuring errors by forecast horizon	0.30
<u>Assessment of Uncertainty</u>	0.23
· Providing objective prediction intervals	0.57
· Developing empirical prediction intervals from forecast errors	0.27
· Specifying sources of uncertainty	0.00
· Combining prediction intervals from alternative methods	0.07
<u>Forecast Presentation</u>	0.48
· Transparency in theoretical assumptions made	0.23
· Explaining methodology	0.43
· Illustrating how forecasts were generated	0.40
· Graphically presenting point and interval forecasts	0.73
· Providing forecasts in exportable formats	0.87
· Forecast Report	0.23
<u>Forecasting a Product Hierarchy</u>	0.74
· Automatic Method Selection	1.00
· Multiple procedures for reconciliation	0.67
· Adjustments for special events	1.00
· Procedures for intermittent demands	1.00
· Identify problem forecasts for manual review	0.33
· Automatic reconciliation of judgmental overrides	0.67
· Facilitate comparison of fcsting and reconcil. approaches	0.50
Overall Weighted Average For All Principles	0.49