

# Sales Forecasts Based On Macro-Economic Indicators

**IDENTIFIES MACRO-ECONOMIC INDICATORS DRIVING BUSINESS,  
VALIDATES INTERNAL REVENUE FORECAST**

## What is SalesForecast?

**SalesForecast** uses correlates sales history with macro-economic indicators as well as projects sales for a company, division, region or even a product line based on the last five years of sales history. These projections are valuable in a several areas including understanding the drivers of the business, budgetary planning, valuations, , etc. Large consulting firms provide similar, more customized services at significantly higher prices.

You could do this your self, but **SalesForecast** allows clients to forego days of tedious calculations and receive seasonally-adjusted forecasts quickly, in a matter of seconds once set up.

This SaaS model has been developed by Rahul Kapur, who is a Managing Director at Icon Investment Partners, along with Guilford Group, that delivers business driven software solutions. It has been used by both companies and private equity firms.

**SalesForecast** develops a range of forecasted sales for upto three years in several ways:

1. Determines which of more than 25 macro-economic variables has a high correlation with sales
2. Correlates sales with those macroeconomic variables to determine the best relationships; focusing on the 4-6 variables with high correlation.
3. Uses future forecasts of the high correlation economic indicators to develop forecasts for your sales
4. Find the best fit for inherent sales trends based on the sales or a moving average that minimizes seasonality impact. It is ideal for companies with large, national customer base.



**“SaaS model, determines which macro-economic factors drive sales, forecasts based on these as well as sales trends”**

The software focuses on the US; though if US sales are significant (say over 60% of total sales), the correlation with global sales can be high.

This provides a capability for smaller to mid-sized companies that many Fortune 100 companies and Wall Street deploy. It is a valuable validation of your internal sales forecast and can help support your budget with your Board or the market if you are a public company.

## Correlation with Selected Macroeconomic Indicators

Firstly, the software determines which of over 25 different macroeconomic indicators most closely correlate with your sales history. This in itself can be valuable insight into what drives your sales. These include GDP, Consumer Price Index, various measures of employment, capacity utilization, output for various sectors such as steel, motor vehicles, etc. (For a list of the variables, their meanings, and sources used, see Appendix A.) To ensure accuracy, the tool automatically inputs the most recent quarterly data for each variable and amends past data if there are updates.

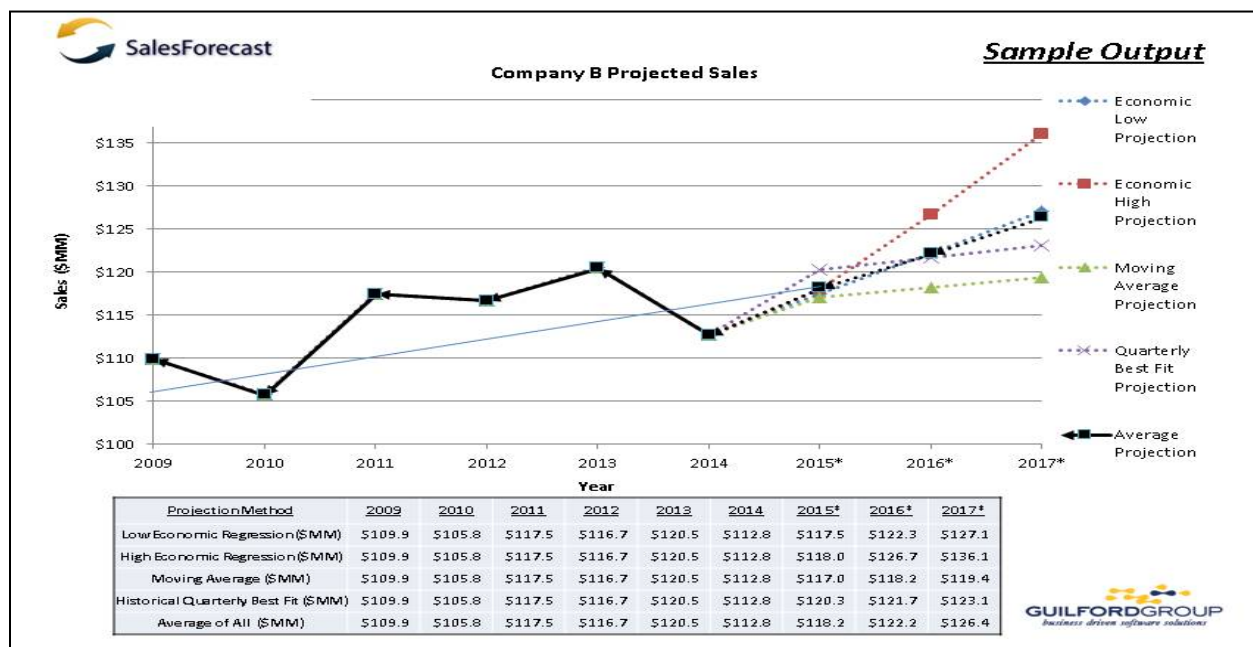
*Please note that special variables important to your sales can be added if data is available.*

Then **SalesForecast** calculates the correlation of each variable to historical quarterly sales and the four quarter moving average. The variables with highest correlations, upto six, are then narrowed down by an iterative process that ensures each variable is at least 95% significant (until all remaining variables have a p value below 0.05). This is important in ensuring that this results in the most accurate regression equations. If a p value of 0.05 or less is not available the software will go to 90% significance or a p value of 0.1.

Reliable forecasts for each variable are then used to project sales via linear regression. Both a low (pessimistic) and high (optimistic) projection are given to establish a range. Here the focus is on the core 80%-85% of the range determined. The results are then displayed numerically, as well as graphically.

The software provides forecasts for these macro-economic indicators but allows you to use your own forecasts for these, allowing you to look at sensitivities as well.

## SAMPLE OUTPUT



**BUILD CUSTOM ECONOMETRIC MODELS: JUST LIKE WALL STREET AND FORTUNE 100 COMPANIES, SUPPLEMENTING INTERNAL FORECASTING ...**

## Projections Based on Sales History

In addition to using macroeconomic data, **SalesForekast** also forecasts sales based strictly on past historical sales. The best-fit line using historical sales projects future sales by minimizing the error of past estimates against actual, historical data. The line is then extended into the future for three years to show how sales should be expected to increase (or decrease) in a vacuum. The tool also produces a best-fit line using the four quarter moving average of sales, which is a similar process that uses less volatile inputs than the historical sales best-fit line. Again, these projections are shown numerically, as well as graphically.

## Conclusions

Finally, all methods are presented in a separate summary table and graph. The arithmetic average of all of the results is also included, which should be thought of as a “consensus of all methods” forecast.

**SalesForekast** is a SaaS product and updates data automatically from the various sources outlined in the appendix. As new quarterly sales data is available and entered, all tables and graphs will update; providing you with the new forecast range.

We will train you to run the software or can manage it for you. Guilford Group can provide custom reports on the forecasts with more insights. Sample reports are available.

## Pricing

**Pricing** is very competitive, especially compared to national consultants. This enables quarterly use for the company or any division, region, or product line; can be used by investment groups that review numerous potential investments

**Very  
Reasonably  
Priced**



- \$8K – 10K set-up
  - \$ 995 per month
  - Semi-annual reports \$2500 each (optional)
  - Customization available
-

## *The Person Behind the Model*



**RAHUL KAPUR**

Rahul Kapur has over 35 years of successful business experience. He works actively with Icon Investment Partners and their portfolio companies in Strategy Development, M&A, New Product Development, re-structuring, geographic expansion, etc. Recent investments include Victor Technologies, Chromalox and Porex.

Rahul has advised companies on the sales forecasting processes and modeling. He has led numerous projects. He did analysis based on these models for Porex and Victor Technologies. SalesForekast has been developed based on his expertise.

Rahul has been on a number of boards, including Innovolt, Smarter Remarketer, Pyrox, Con-space, WorkHere and Guilford Group. Rahul worked with Aearo Technologies, Dow Chemical and Unilever. He has engineering and MBA degrees.

### **For more information, contact Guilford Group**

***Guilford Group has over 20 years of experience providing expertise in custom developed software solutions for businesses, on-going maintenance & support and developing software products.***

- Focused on business driven software solutions to generate revenue, contain costs and manage capital
- Deep capabilities in business improvement, mobile technologies and custom web applications
- Overall industry focus is Transportation/Trucking, Logistics/Warehousing, Industrial and Manufacturing
- Customer base includes Fortune 500 companies
- Nearly 30 associates in the USA with off-shore sourcing capabilities to flex resources as needed
- Headquartered in Carmel, Indiana (Indianapolis)

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# Sales Forecasts Based On Macro-Economic Indicators

## Appendix : Macro-Economic Variables

<u>Macroeconomic Variable</u>	<u>Description of Variable</u>	<u>Data Source</u>	<u>Low Forecast Source</u>	<u>High Forecast Source</u>
<b>All Urban CPI (Current Series) (Index 1982-1984 = 100)</b>	A measure that examines the changes in the price of a basket of goods and services purchased by urban consumers	U.S. Department of Labor: Bureau of Labor Statistics	Wall Street Journal Survey	ITR Trend Report
<b>PPI Manufacturing (Index 2010 = 100)</b>	A family of indexes that measures the average change in selling prices received by manufacturers of goods over time	Organization for Economic Cooperation and Development	ITR Trend Report	ITR Trend Report
<b>Capacity Utilization: Total Industry (Percent of)</b>	A metric used to measure the rate at which potential output levels are being met or used. Displayed as a percentage, capacity utilization levels give insight into the overall slack that is in the economy or a firm at a given point in	Board of Governors of the Federal Reserve System	Trading Economics	forecast.com
<b>Industrial Production (Index 2007 = 100)</b>	a measure of output of the industrial sector of the economy. The industrial sector includes manufacturing, mining, and utilities	Board of Governors of the Federal Reserve System	ITR Trend Report	ITR Trend Report
<b>Employment, Nonfarm (Thousands of Persons)</b>	Employment in non-agricultural industries	U.S. Department of Labor: Bureau of Labor Statistics	Bureau of Labor Statistics	Bureau of Labor Statistics
<b>Employment, Manufacturing (Thousands of Employees)</b>	Employment in good-manufacturing industries	U.S. Department of Labor: Bureau of Labor Statistics	Bureau of Labor Statistics	Bureau of Labor Statistics
<b>Employment, Services (Thousands of Persons)</b>	Employment in the services industry	U.S. Department of Labor: Bureau of Labor Statistics	Bureau of Labor Statistics	Bureau of Labor Statistics
<b>Employment, Government (Thousands of Persons)</b>	Employment in local, state, and federal government	U.S. Department of Labor: Bureau of Labor Statistics	Bureau of Labor Statistics	Bureau of Labor Statistics
<b>Employment, Agriculture (Thousands of Persons)</b>	Employment in farming related industries	U.S. Department of Labor: Bureau of Labor Statistics	Bureau of Labor Statistics	Bureau of Labor Statistics
<b>Real GDP (Billions of Chained 2009 Dollars)</b>	A macroeconomic measure of the value of economic output adjusted for price changes (i.e., inflation or deflation)	U.S. Department of Commerce: Bureau of Economic	Wall Street Journal Survey	International Monetary Fund (IMF) Forecast
<b>Private Nonresidential Fixed Investment</b>	Measures spending by private businesses, nonprofit institutions, and households on fixed non-residential assets in the U.S. economy. Fixed assets consist of structures, equipment, and software that are used in the production of goods and	U.S. Department of Commerce: Bureau of Economic	Bureau of Labor Statistics	U.S. Energy Information Administration
<b>Real Domestic Final Sales of Motor Vehicles (Billions of</b>	The number of domestically produced units of cars, SUVs, minivans and light trucks that are sold. Motor vehicle sales are an economic indicator that records the reported sales by individual manufacturers	U.S. Department of Commerce: Bureau of Economic	ITR Trend Report	ITR Trend Report

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<b>Total Commercial Construction Spending</b>	Measures the amount of spending towards new commercial construction	U.S. Department of Commerce: Census Bureau	American Institute of Architects	American Institute of Architects
<b>Residential Construction Spending (Millions of</b>	Measures the amount of spending towards new single family homes and apartments construction	U.S. Department of Commerce: Census Bureau	ITR Trend Report	Sikich
<b>Total Public Construction Spending Including Govt.</b>	Construction of highways, streets, military reservations, water supply facilities, public school buildings, housing projects, and sewer systems	U.S. Department of Commerce: Census Bureau	Newsmax Finance	AIA Consensus Construction Forecast
<b>Healthcare Construction (Millions of Dollars)</b>	Included in this category are hospitals, mental hospitals, infirmaries, hospital infrastructure, clinics, medical offices, labs, doctor and dentist offices, outpatient clinics, research labs (non-manufacturing, non-educational, or non-hospital), nursing	U.S. Department of Commerce: Census Bureau	American Institute of Architects	Buildings Magazine
<b>Real Personal Consumption : Energy Goods and Services*</b>	Measure of consumer spending on goods and services in the U.S. economy related to energy	U.S. Department of Commerce: Bureau of Economic	U.S. Energy Information Administration	ITR Trend Report
<b>Military/ Defense Spending (Billions of</b>	The amount of financial resources dedicated by a nation to raising and maintaining an armed forces or other methods essential for defense purposes	U.S. Department of Commerce: Bureau of Economic	usgovernmentspending.com	usgovernmentspending.com
<b>Personal Consumption: Food Services (Billions of</b>	Annually measures total U.S. food expenditures by households	U.S. Department of Commerce: Bureau of Economic	Bureau of Labor Statistics	ITR Trend Report
<b>Corporate Profits: Chemical Products</b>	Corporate Profits after tax of manufactured chemical goods	U.S. Department of Commerce: Bureau of Economic	ITR Trend Report	Lucintel
<b>Healthcare Spending (Billions of Chained 2009</b>	Healthcare spending consists of all expenditures or outlays for medical care, prevention, promotion, rehabilitation, community health activities, health administration and regulation and capital formation with the predominant objective of improving	U.S. Department of Commerce: Bureau of Economic	The Washington Post	healthaffairs.org
<b>Consumer Sentiment Survey** Normalized</b>	A statistical measurement and economic indicator of the overall health of the economy as determined by consumer opinion	Organization for Economic Cooperation and Development	N/A	N/A
<b>Total Business Inventories (Millions of Dollars)</b>	Tracks the dollar amount of inventories held by retailers, wholesalers and manufacturers across the nation. Business inventories are essentially the amount of all products available to sell to other businesses and/or the end consumer	U.S. Department of Commerce: Census Bureau	Bureau of Labor Statistics	U.S. Energy Information Administration
<b>U.S. Total Retail Sales (Millions of Dollars)</b>	An aggregated measure of the sales of retail goods over a stated time period, typically based on a data sampling that is extrapolated to model an entire country. It is compiled and released by the Census Bureau and the Department of	Retail Indicators Branch, U.S. Census Bureau	ITR Trend Report	ITR Trend Report
<b>U.S. E-Commerce (Millions of Dollars)</b>	Includes all products and services ordered or booked via the internet on any device, including leisure and unmanaged business travel	Retail Indicators Branch, U.S. Census Bureau	statista.com	emarketer.com