

Good Bye Traditional Budgeting, Hello Rolling Forecast: Has The Time Come?

Thomas L. Zeller, Loyola University Chicago, USA
Lawrence M. Metzger, Loyola University Chicago, USA

ABSTRACT

This paper argues for a new approach to accounting textbook budgeting material. The business environment is not stable. Change is continuous, for large and small business alike. A business must act and react to generate shareholder value. The rolling forecast provides the necessary navigational insight. The traditional annual static budget does not. Managing a business, looking inwards and backwards and making decisions to hit the annual budget target no longer serves management in generating shareholder value. In most situations this approach to company management only leads to compromised performance. Leadership may not reach long-term shareholder wealth potential in using the traditional annual budget as a command and control device. Our research shows companies are moving to a rolling forecast as a management navigational tool. Leadership uses the forecast to navigate continuous change in creating shareholder value. This paper demonstrates how to build leadership concepts that go along with the rolling forecast, as well as the rolling forecast process itself into the classroom and accounting textbook material. Accounting and graduate business students need this type of education to help lead and increase a business' chances of success.

Keywords: Rolling Forecast; Budgeting; Leadership

INTRODUCTION

*T*his paper argues for a change to annual budgeting material covered in accounting textbooks. Strategic cost/managerial accounting textbooks typically portray budgeting as a static, annual, and linear process. The material teaches students that a business looks into the future annually and plans accordingly. Nothing could be further from the truth. Accounting academics must answer the call and teach budgeting as practiced in leading companies today.

Leading companies use the rolling forecast, as a replacement to or in combination with a traditional budget, to navigate the business as conditions change. Change is constant among suppliers, competitors, customers, and more. The rolling forecast serves as a compass, showing the current financial course because of the constant change.

First, this paper argues why textbooks should cover the rolling forecast. Next, the paper presents how accounting textbooks can shift more emphasis on the rolling forecast process and related leadership principles. The last section provides a rolling forecast illustration that a faculty member may consider to use as a classroom demonstration.

We write this paper to generate discussion, debate, and constructive criticism about accounting academics' approach to budgeting. Textbook budgeting tools and techniques developed for the industrial revolution need a facelift. The business climate has forever changed and so must the accounting academics' approach to budgeting tools and techniques taught to future leaders.

Rolling Forecast And Leadership Style

A careful critique draws out the difference between traditional budgeting and the rolling forecast. There is a difference! Horngren et. al. (2012) define a traditional budget as a quantitative expression of a proposed plan of action by management for a specified period and an aid to coordinate what needs to be done to complement that plan. The budget serves as a financial plan in support of a specified target. The budget serves as a command and control guide. Leadership focuses on the budget like a bullseye on a target. Often leadership evaluates success or failure based on hitting budget targets, irrespective of long-term consequences.

Morlidge and Player (2010) define the rolling forecast as a financial estimate of likely future outcomes, where the company thinks it will be, based on current assumptions and economic forecasts about the environment and the organization's plan. Simply, the rolling forecast signals the financial outcome based on current assumptions and economic forecasts similar to how a compass provides navigational information. Leadership continuously looks twelve to eighteen months into the future.

The definitions guide very different leadership styles. A traditional budgeting leadership style makes decisions within the confines of the current operating budget. The budget locks in performance expectations. Variance analysis serves as a feedback mechanism. Leadership dedicates valuable time to understand budget variances as a method of learning and feedback. Decisions focus on moving the company to hit budget values. As a result, leadership based on traditional budgeting puts binoculars in decision makers' hands, looking where the ship has been. The business culture runs on a command and control fuel base.

A rolling forecast compass calls for proactive leadership. According to Morlidge and Player (2010), leadership based on a rolling forecast focuses decisions upon likely future outcomes. Certainly, when a business first opens the door for commerce, it must have a financial budget. Once a ship sets sail for a destination, however, wind and ocean currents ebb and flow. Storms mount on the horizon. Unexpected winds and strength of currents push the ship off course. Likewise, new business opportunities surface unexpectedly, as do challenging competitors.

Leadership must respond. It adjusts course taking into consideration the wind and ocean currents as they are currently, not as they were budgeted eight months prior. Importantly, targets and expectations adjust to new insight provided by the rolling forecast. Leadership works to maximize shareholder value by responding to the changing market landscape. Leadership evaluates success or failure based on relative performance, such as changes in the original assumptions, economic forecasts, and the current competition situation. Leadership based on the rolling forecast puts binoculars in decision makers' hands, evaluating the ship's current path and likely destination. Performance is based on measures relative to the changing business environment. The business culture runs on an intellectual capital fuel base - informed response to market conditions - in an effort to maximize shareholder value.

Why should accounting and graduate business students experience the rolling forecast and related leadership principles? The dynamics of business call upon these tools to increase a business' chances of success. Strong academic exposure will help students add value to a business early into their career.

LITERATURE REVIEW: THEORY

Bogsnes (2009) provides a comprehensive review of emerging leadership and process principles applied with the rolling forecast. His work demonstrates why and how the rolling forecast is an essential leadership tool. The work draws upon Beyond Budgeting Roundtable's (BBRT.org) compilation of experience and Hope and Fraser's (2003) writings. Table 1 recaps Bogsnes' leadership and process principles.

The leadership principles listed in Table 1 set the stage for why a company needs a rolling forecast. Profits come from customers. The emphasis is on serving the customer profitably. The principles emphasize that business functions must work together to serve the customer profitably. Leadership expects everyone in the business to think through these principles and contribute to their use in the firm. Note specifically the values principle. Essentially, management and the workforce make decisions based on a set of core values, goals, and boundaries. For example, maximizing shareholder value is a common goal. The principle in this example points to the need for decisions that focus on maximizing shareholder value, not on manipulating the system to meet the annual budget.

Table 1: Leadership And Process Principles

Leadership Principles	
Customer	Focus everyone on improving customer outcomes, not on hierarchical relationships.
Organization	Organize as a network of lean, accountable teams, not around centralized functions.
Responsibility	Enable everyone to act and think like a leader, not merely follow the plan.
Autonomy	Give teams the freedom and capability to act; do not micro-manage them.
Values	Govern through a few clear values, goals, and boundaries, not detailed rules and budgets.
Transparency	Promote open information for self-management; do not restrict it hierarchically.
Process Principles	
Goals	Set relative goals for continuous improvement; do not negotiate fixed performance contracts.
Rewards	Reward shared success based on relative performance, not on meeting fixed targets.
Planning	Make planning a continuous and inclusive process, not a top-down annual event.
Controls	Base controls on relative indicators and trends, not on variances against plan.
Resources	Make resources available as needed, not through annual budget allocations.
Coordination	Coordinate interactions dynamically, not through annual planning cycles.
Bogsnes (2009)	

The process principles point to how a rolling forecast plays an essential part in improving a business' chances of success. Goals, rewards, and controls are based on relative measures, marked against trends and continuous improvement. Leadership bases performance in reference to how well the workforce responds to changing conditions, not a fixed amount set a year ago as in the traditional annual budget. As business conditions change, the rolling forecast changes.

Planning is a continuous leadership process. The rolling forecast provides a quantitative expression of a firm's current course of action based on current knowledge and assumptions. Decisions may be necessary to change the course or keep the current direction. Leadership decisions about resource allocation likely change during a year; thus, so must the financial forecast. The process principles essentially point to the necessity of a business to be flexible. The rolling forecast helps management estimate the financial outcome of the current course. Overall, Bogsnes (2009) argues a case for leadership and process principles to fit the current business climate of continuous change.

Forecasting Horizons

Morlidge and Player's (2010) book describes how a business should approach Bogsnes' (2009) leadership and process principles. The annual budget serves the start-up business only. Planning and budgeting are essential building blocks of success. However, once the business doors open, leadership must be responsive to competitive dynamics. A business must act and react to ensure success. The rolling forecast serves as the act and react navigational tool.

Morlidge and Player (2010) emphasize the difference between a forecast and a target. The forecast plots the current chart. A target specifies where the business wants to go. The forecast provides input to guide the business to hit a specified target.

Perhaps a better expression would be a moving target. The target may change relative to the original target as business conditions change. Leadership closes the gap between the forecast and the relative target by making decisions based upon the forecast. Morlidge and Player (2010) identify the window of time required to build a forecast and make a decision to close the gap between the current course and the business-forecasting horizon.

The business-forecasting horizon fits between the near term and strategic planning horizons. Change is very difficult in the near term. Change is almost boundless in the strategic planning horizon. A business-forecasting horizon represents a window of time to react and close the gap between a forecast and target. The forecast enables leadership to manage the business, shift and adjust, and act and react to the current trends and competitive forces. Table 2 serves as a basis to illustrate business-forecasting horizon examples.

Table 2: Business-Forecasting Horizon

Rolling Forecast Variables	Update Frequency	Forecast Horizon
Sales variables		
• Product A	Weekly	Quarterly
Production Variables		
• Raw material cost	Quarterly	Quarterly

To illustrate, assume a weekly review of current orders indicates that sales of Product A are declining. The previous quarterly business-forecasting horizon showed an increase in sales. Management finds that an unexpected marketing promotion by a competitor is moving the ship off course. In response, the company adjusts their current marketing campaign(s) for Product A. Note how an external market condition – the competitor’s marketing efforts – drives the response.

The new quarterly forecast for Product A takes into consideration the competitive climate. The sales forces’ performance is based on relative performance. That is, management evaluates Product A’s sales by taking into consideration the competitor’s heavy marketing. The sales team is not put into the position of gaming the system to hit Product A’s sales budget established 10 months prior. In any rolling forecast scenario, there is no need to game the system and hit budget values, regardless of the damage to brand image or more. Management uses the current market conditions and their planned response to forecast sales through the quarterly business-forecasting horizon in an effort to maximize shareholder value.

The next example focuses on raw material costs. Assume a quarterly review of a key raw material shows an unexpected decline in cost by 20 percent. The previous business-forecasting horizon showed a 5 percent decline. Management finds the global demand decreased faster than planned due to a substantial change in manufacturing technology and economic conditions. The new technology uses less of the raw material in the production process, therefore reducing global demand and lowering the cost.

The new technology points to two savings. The obvious is the decline in raw material costs. The second is managements’ consideration of a capital acquisition of the new technology. (Make the resource available immediately. See Process Principle – Resources in Table 1.) The new quarterly forecast for the raw material takes into consideration the decrease in cost immediately. Leadership bases the purchasing department’s performance on the 20 percent decline in cost. Future business forecasts incorporate the savings driven by the new technology, assuming the company makes the capital expenditure. Leadership builds both decreases into the updated gross profit forecast. There is no need to put the unexpected savings in a cookie jar. Relative performance is the focus, not gaming the system to hit a budget set several months prior.

The examples show how the business-forecasting horizon links two important concepts. First, process principles come into play. The rolling forecast makes planning a continuous process based on selective, relative indicators, and trends. Management deploys resources as needed based on forecast information. Management coordinates business activities to maximize resources. Second, the business-forecasting horizon structure opens the door to release the workforces’ intellectual capital. Having the opportunity to respond and move to current trends draws a continuous focus to the key variables. The system encourages everyone in the business to learn, contribute, and monitor the key variables and related market conditions.

LITERATURE REVIEW: PRACTICE

The literature calls upon accounting academics to respond. Montgomery (2002) highlights the rolling forecast as a tool that provides vision and direction. According to Montgomery (2002), leadership sets targets in the strategic planning process. The rolling forecast converts the strategic plan into financial terms by estimating account level buckets, minimizing the distraction of specific account level detail. The rolling forecast helps leadership focus on the forest, not the trees.

Survey research in 2006 calls for the rolling forecast as one tool leadership may want to consider as a means to improve its chances of success. Durfee (2006) recaps CFO Research Service’s findings. The findings show

a significant degree of dissatisfaction with traditional budgets as a management tool. The findings show 45 percent of the respondents believe budgeting is contentious and political, 72 percent report budgeting yields unrealistic numbers, and 53 percent contend using budgets as a means of planning and control makes managers behave badly.

Durfee (2006) also recaps American Productivity & Quality Center research findings. CFOs are using a blended approach to planning. The findings show 48 percent use a rolling forecast to guide the business. Durfee (2006) also recaps research by The Hackett Group.¹ This research indicates companies should set targets relative to the competition in the budgeting and planning process.

In 2008 the Hackett Group found several companies continue to miss their earnings forecast. The complexity of business, the lack of good internal forecasting processes, and market instability contribute to the problem. The Hackett Group recommends the rolling forecast as a tool to improve business forecasting.

The evidence points to two conclusions. First, the findings suggest that traditional budgeting no longer serves management. Morlidge and Player (2010) appear to be on target by stating that budgeting tools and techniques developed 100 years ago need a facelift. Second, more recent survey work sharpens the focus on the BBRT leadership and process principles as an alternative to increasing a business' chance of success and generating shareholder value.

Banhan (2011) reports how companies have put into action Bogsnes' (2009) leadership and process principles. Banhan (2011) finds that companies do not completely abandon the conventional budget. Management uses the conventional budget to set targets and keep the workforce focused on goal(s). The rolling forecast signals how to manage the business as conditions change, he reports. According to Banhan (2011), Unilever uses a rolling 8-quarter forecast updated at the unit level, by unit level managers responsible for responding to market conditions. Norton Lilly, according to Banhan (2011), uses a rolling 12-month forecast updated for revenue and pretax margin goals. Again, unit level managers are responsible for controlling revenue and expenses. Companies support using the rolling forecast as a tool to manage the changing business environment.

Lamoreaux (2011) references essentially the same literature as Banhan (2011). Lamoreaux (2011) published his work in the Journal of Accountancy within months of Banhan's (2011) publication. Our interpretation is that both editorial teams independently recognized the growing use of the rolling forecast and BBRT's principles in practice. We highlight this point as evidence to the increasing practice of the rolling forecast and the need for textbook and classroom coverage.

Several consortiums and private consulting firms are working to meet the accounting and business practitioners' needs to learn about and implement the rolling forecast and related leadership tools. For example, the BBRT group "is an international shared learning network of member organizations with a common interest in transforming their performance management models to enable sustained, superior performance" (www.bbrt.org/). The BBRT consortium group has been in existence for over ten years. The group continues to expand. BBRT offers an expanding list of educational material. Membership extends to Europe, North America, Australia, and the Middle East.

For-profit consulting firms and training programs offer extensive rolling forecast services and implementation seminars. A web search on the key phrase "rolling forecast" surfaces numerous hits. Several companies offer rolling forecast training, implementation, and consulting services.

We draw attention to the consortiums and private consulting firms for two reasons. The findings provide evidence that businesses are moving to implement the rolling forecast. That is, these entities are providing services and seminars in an effort to meet a market need. If the demand did not exist, then there would be no need to offer the

¹ The Hackett Group (NASDAQ: HCKT), a global strategic advisory firm, is a leader in best practice advisory, benchmarking, and transformation consulting services including shared services, offshoring, and outsourcing advice. Utilizing best practices and implementation insights from more than 4,000 benchmarking engagements, executives use Hackett's empirically based approach to quickly define and prioritize initiatives to enable world-class performance.

services and seminars. The findings also suggest that one reason the BBRT consortium and consulting companies continue to gain momentum is that accounting academics is not meeting this need on the academic front.

In conclusion, the literature suggests accounting academics needs to reconsider the education process in the budgeting topic area. The competitive landscape continues to shift. One way to increase a business' chances of success is to release the workforce's intellectual capital. The leadership and process principles identified by Bogsnes (2009) provide a guide to releasing the workforce's intellectual capital. The rolling forecast serves as the mechanical tool for estimating the business direction.

To follow, we suggest how a textbook and faculty member may consider extending the traditional budget chapter to include rolling forecast material. We offer these suggestions as a basis for constructive criticism. We perceive that rolling forecast material will evolve into the classroom, similar to how activity-based costing weaved its way into the textbooks and classroom over time.

Rolling Forecast Textbook And Classroom Material

Introduction Material for a Chapter Appendix

Businesses are moving to a rolling forecast model of planning and control. The traditional way of upper management setting the budget and then managing the business to hit the annual budget target may or may not lead to short-term success. More often than not, this approach to leadership sub optimizes the medium to long-term success of a company. The Beyond Budgeting Roundtable (BBRT) (bbrt.org) group's leadership and process principles, operationalized by the rolling forecast, increase a business' short, medium, and long-term chances of success.

An example illustrates. Imagine that a firm (Company A) produces a popular beverage for young adults. The beverage promises improved exam performance when a student drinks an 8 oz. can twenty minutes before the exam. (This is an example. No such product exists.) Management prepares the traditional sale, production, advertising, and all related budgets based on annual sales of 1,200,000 cans per year. Management announces profit expectations based on this volume. Management implements the plan and sales are going along just fine, until a competitor responded.

A major competitor (Company B) introduces a similar product with identical benefits at a lower price. Company A management reacts. Regardless of the consequences, management puts a full court press on to hit budget values and expected profits. Employees work overtime with no additional pay; purchasing buys cheaper ingredients; advertising puts out an additional promise that if a student consumes two 8 oz. cans before an exam, Company A guarantees an "A" on the exam. At year-end, the accounting records show 1,200,000 cans sold and is therefore within budget. Leadership celebrates. Company A hits the profit expectations.

The beverage example illustrates how businesses use the budget as a command and control tool with a narrow focus on short-term performance. Management dedicates significant resources on developing an annual budget that in many cases is obsolete shortly after the year begins. While this process is of some value for cost control and resource planning, it is not enough. Are employees happy about working extensive overtime with no extra compensation? Is the student who drank two 8 oz. cans and failed the exam a satisfied repeat customer? Management lacks a focus on medium to long-term value creation when using the annual budget as a guide to decisions.

The Concept of Rolling Forecasts

The idea behind rolling forecasts is to provide an ongoing and continuous planning horizon. The rolling forecast projects future outcomes based on managements' assumptions and previous decisions. Current decisions can change the forecast to hit constantly moving targets. The rolling forecast serves as a navigational tool.

Most static budgets predict quarterly expectations but will generally project out only as far as the next fiscal year. A rolling forecast foregoes the one-year budget horizon constraint and looks to continuously roll the projected forecasts forward for at least four, and as many as eight, quarters. Rolling forecasts maintain a continually updated planning horizon.

To follow our beverage analogy, a rolling forecast puts budget and profit expectation into perspective. Leadership reacts with medium and long-term considerations in play. Advertising will not make the ‘drink two 8 oz. cans before an exam and get an “A”’ promise to students under a rolling forecast model. The model would signal declining sales the following year because of an unfulfilled outcome for the student, with the two-drink guarantee. The student may get a “B” on an exam.

The term forecast is important to the rolling forecast process. Morlidge and Player (2010) define a forecast as a description/estimate of likely future outcomes, where we think we will be, based on assumptions about the environment and the organization’s plan. A rolling business-forecasting horizon is more than just an extension of the static budgeting process. It is used as a high level view of performance guiding management to adapt to its ever changing environment. It attempts to measure the world as it is, not as the picture management wants to see.

How The Rolling Forecast Works

The rolling forecast provides a constant planning horizon. It requires a constant flow of current business data. The data comes from marketing, sales, finance, production and units throughout the business. By maintaining a continually updated horizon and requiring the input of current data, rolling forecasts allow management to better allocate their resources to appropriate discretionary investments. Appropriate forecasting allows the firm to compare where they are to where they can go and ultimately where they want to be.

This way of thinking comes from the BBRT group. This group developed 12 Beyond Budgeting Leadership and Process Principles. These principles and the link to a rolling forecast are shown in Table 1. We suggest putting Table 1 in the text and discussing it in the classroom.

More specifically, management must identify which particular variables or metrics to forecast. The variables should focus on measures that really show if a strategy is succeeding. An analogy would be the need to identify cost drivers in applying activity-based costing. The variables should provide enough insight to allow management to adapt quickly to changing environments. This requires a decentralized forecasting process. Those on the front line should do the forecasting.

Additional guidelines include:

- Do not over-specify the accuracy of the forecasted values. Rather than spending too much time and resources marginally improving reliability, reasonable estimates should be used.
- Avoid excessive detail in the metrics. A few key variables should that allow management to take corrective action be chosen.
- Do not assume growth or positive results. Rolling forecasts should attempt to measure reality, not projected goals. Taking last year’s numbers and increasing them by a certain percentage is not an application of a rolling forecast.
- Make sure that the rolling forecast process is an ongoing integrated activity, not a once a year event. It is appropriate, indeed recommended to use more than one time horizon for different metrics.
- The metrics developed should be actionable, i.e. they should point management in the direction of improving performance.

As an example, Southwest Airlines provided the BBRT group with the following illustration. Table 3 shows which metrics Southwest deems most appropriate along with the respective planning horizon.

Table 3: Southwest Airlines Illustrative Metrics And Time Frame For The Rolling Forecast

Southwest Airlines' Forecasting Frequency	Economic Relevance	Variability	Speed of Response	Update Frequency	Forecast Horizon
Revenues	High	High	High	Daily	Quarter
Labor Costs	High	Low	Medium	Twice Monthly	Six Months
Fuel Costs	High	High	Medium	Weekly	Quarter
Maintenance Spending	Medium	Medium	Medium	Twice Monthly	Six Months
Advertising Spending	Medium	Medium	High	Monthly	Six Months
Aircraft Ownership Costs	Medium	Low	Low	Quarterly	Year
Airport Rates and Charges	Medium	Medium	Low	Weekly	Six Months
Other Operating	Medium	Medium	Medium	Twice Monthly	Quarter

These rolling forecast measures are very important to Southwest Airlines' leadership team. The forecasted values help leadership respond quickly to changes in their operating environment. They are metrics that allow for action. For example, a change in fuel costs and supply will have a major effect on operations. Weekly analysis allows Southwest Airlines' to buy or hedge as needed. The result of these forecasts is that it allows Southwest's management to make rapid informed decisions based upon what is actually forecasted and not what a potentially outdated budget dictates.

Textbook Illustration

Rutherford Chemical Company is a multi-national firm that manufactures a variety of chemical based products such as fertilizers and dyes that it sells to various commercial and industrial customers. The customers are primarily in the agricultural, mining, heavy manufacturing, and chemical industries. The company has manufacturing operations in North and South America, Europe, and Asia. About half of its total sales come from the U.S. while the rest is spread relatively evenly throughout its other areas of operations.

The company faces stiff competition from a variety of firms both domestically and internationally. Price competition is keen and profit margins are tight, especially given the firms' desire to maintain a higher level of corporate responsibility than is required in certain countries. Profit margins vary considerably across product lines and changes in product mix can have a significant effect on profits.

The firm purchases raw materials and manufactures products in several other countries. Purchases of raw material and foreign sales are denominated in currency of the country of purchase or sale. Some of the raw materials purchased in foreign markets are commodities such as zinc and lithium. The local government regulates the production and sales in some of the counties. Additionally, the company purchases agricultural products used as raw materials in several of the firm's products. These commodities are subject to weather and other environmental risks that may affect their availability. Shipping costs can vary depending upon government regulation and the supply and price of diesel fuel for trucks.

Most of the products produced rely on technology rather than a large labor force. Consequently, labor is a relatively small part of a product's total cost. The firm provides a higher than normal wage rate and access to basic healthcare to help ensure the workers a somewhat better quality of life.

Due to the nature of the products, the company is subject to stringent regulations. The degree of regulation varies considerably from country to country with U.S. operations facing the most stringent regulations and other countries requiring less oversight. Despite the additional cost, the company attempts to maintain the same level of safety and environmental controls that the U.S. requires in every country it operates.

As a condition of operation, some of the countries require that Rutherford use that country's financial system to finance their local operations. This makes the firm's financing subject to funding availability and interest rates charged in that country. This can be problematic as some of the countries can experience large changes in inflation. The government required funding poses potential adverse effects on both interest rates and foreign exchange transactions.

Table 4 shows a summary of the decision variables that Rutherford Company deems critical along with their rolling forecast measurement criteria.

Table 4: Rutherford Chemical Company Decision Variables

Rolling Forecast Variables	Economic Relevance	Variability	Speed of Response	Update Frequency	Forecast Horizon
Product sales mix	High	High	High	Monthly	Quarterly
Raw material availability	High	Medium	Medium	Weekly	Monthly
Agricultural components	High	Low	Medium	Monthly	Seasonally
Regulatory environment	High	Medium	Medium	Semi-annually	Yearly
Foreign currency exchange rate	Medium	High	High	Weekly	Quarterly
Foreign interest rates	Medium	Medium	Medium	Monthly	Quarterly
Diesel fuel costs	Medium	Medium	Medium	Quarterly	Semi-annually

The main criterion for choosing these variables is to allow the firm to quickly respond to their particular situation. The variables chosen allow for action. The variables are not as broad as changes in sales revenues or changes in cash flow. They themselves are not real action variables. Therefore, with respect to sales revenue, looking at trends in sales mix can allow for more action than just a change in sales revenue. Raw material and agricultural components are central to the production process and must be monitored with rolling forecasts made on a very frequent basis. Fuel price volatility may be a concern for the shipping department and carefully watched by management. Labor is a much smaller percentage of total costs and does not warrant ongoing rolling forecasting.

Operating business units in foreign countries open up the firm to foreign exchange losses. Access to foreign financing and requisite interest rates is important to update technology as needed. The regulatory environment of countries, especially foreign countries, is unpredictable, potentially adding significant costs to the firm's operations.

Rolling Forecast Example

Table 5 shows the base rolling forecast for Rutherford Chemical Company beginning for the calendar year 2013. The original forecast columns represent the company's best estimates given its projected domestic and foreign forecasts, highlighting the variables it considers most crucial to its operations in gray.

Table 5: Rutherford Chemical Company Original Budget

Rutherford Chemical Company Rolling Forecast Budget Example For Year Ended 12/31/2013			
Original Budget (in 000s)			
	Domestic	Foreign	Total
Revenues	\$ 100,000	\$ 98,000	\$ 198,000
Raw material costs	30,000	29,000	59,000
Agricultural component costs	12,000	11,000	23,000
Direct labor costs	6,000	4,000	10,000
Overhead/technology costs	15,000	14,500	29,500
Total production costs	<u>63,000</u>	<u>58,500</u>	<u>121,500</u>
Gross margin	37,000	39,500	76,500
Operating costs			
Selling and admin costs	8,000	8,000	16,000
Diesel fuel costs	1,000	1,200	2,200
Other operating costs	3,000	2,000	5,000
Total operating costs	12,000	11,200	23,200
Financing costs			
Interest expense	2,000	2,000	4,000
Foreign exchange gain(loss)	0	500	500
Total financing costs	<u>2,000</u>	<u>2,500</u>	<u>4,500</u>
Projected Income before tax	<u>\$ 23,000</u>	<u>\$ 25,800</u>	<u>\$ 48,800</u>

Towards the end of the first quarter, it becomes apparent that the projected sales mix of the company is shifting away from some of its higher gross profit products to some of the lower gross profit products. This is true with both domestic and foreign operations. This shift is occurring primarily due to stronger than expected price competition and a lower than expected demand for the company's products in certain industries. This change also affects forecasted selling expense. The company compensates the sales staff on a commission basis. Further analysis shows that while the necessary raw materials should be available for the near future at current process, agricultural components needed for some of the low margin products will become less available and more costly due to worse than normal weather patterns. Labor and overhead are primarily fixed costs and will not be affected by the expected change in sales mix.

Additionally, foreign currency has strengthened against the dollar. The change creates exchange losses on the financial statements. Interest on long-term foreign debt is on a variable rate basis and is expected to increase in the short-term to go along with the stronger foreign currency. Diesel fuel prices are expected to remain relatively constant in the foreseeable future and there is not expected to be much of a change in fuel usage as the products are being shipped under existing contracts. There are no additional regulatory issues on the horizon. A new rolling forecast is prepared for the next twelve months (period ended 3/31/2014) based on these changes and managements' responses to the competition (See Table 6).

Table 6: Rutherford Chemical Company Forecast - Twelve Months (Period Ended 3/31/2014)

Rutherford Chemical Company Rolling Forecast Budget Example For Year Ended 03/31/2014			
Original Budget (in 000s)			
	Domestic	Foreign	Total
Revenues	\$ 90,000	\$ 88,000	\$ 178,000
Raw material costs	27,500	27,000	54,500
Agricultural component costs	13,500	12,000	25,500
Direct labor costs	6,000	4,000	10,000
Overhead/technology costs	<u>15,000</u>	<u>14,500</u>	<u>29,500</u>
Total production costs	<u>62,000</u>	<u>57,500</u>	<u>119,500</u>
Gross margin	28,000	30,500	58,500
Operating costs			
Selling and admin costs	7,500	7,800	15,300
Diesel fuel costs	1,000	1,200	2,200
Other operating costs	<u>3,000</u>	<u>1,900</u>	<u>4,900</u>
Total operating costs	11,500	10,900	22,400
Financing costs			
Interest expense	2,000	2,800	4,800
Foreign exchange gain(loss)	<u>0</u>	<u>(1,000)</u>	<u>(1,000)</u>
Total financing costs	<u>2,000</u>	<u>1,800</u>	<u>3,800</u>
Projected Income before tax	<u>\$ 14,500</u>	<u>\$ 17,800</u>	<u>\$ 32,300</u>

The company's forecasts held true for the second quarter of 2013. Rolling forward to the end of the second quarter, the company forecast the continued changed sales mix predicted at the end of the first quarter. Raw material and agricultural costs have stabilized at the 3/31/2014 forecast levels. As before, labor and technology costs are relatively fixed. Diesel fuel costs are forecasted to drop as the company has responded to the lower projected sales with a more efficient distribution plan. Overall, foreign currency remains strong against the dollar and the company has entered into foreign exchange forward contracts to help hedge against foreign exchange losses. Therefore, fluctuations in foreign exchange rates should be minimal. Interest rate changes have been hedged with interest rate swaps, which should minimize fluctuation in interest expense. A highly likely regulatory change in one of the Asian countries will require a potential one-time charge of approximately \$200,000 sometime in early 2014. A new rolling forecast is projected for the next twelve months (period ended 6/30/2014) based on this information and managements' decision to maximize shareholder value (See Table 7).

Table 7: Rutherford Chemical Company Forecast - Twelve Months (Period Ended 6/30/2014)

Rutherford Chemical Company Rolling Forecast Budget Example For Year Ended 06/30/2014			
Original Budget (in 000s)			
	Domestic	Foreign	Total
Revenues	\$ 91,000	\$ 88,500	\$ 179,500
Raw material costs	28,000	27,000	55,000
Agricultural component costs	13,500	12,300	25,800
Direct labor costs	6,000	4,000	10,000
Overhead/technology costs	15,000	14,500	29,500
Total production costs	<u>62,500</u>	<u>57,800</u>	<u>120,300</u>
Gross margin	28,500	30,700	59,200
Operating costs			
Selling and admin costs	7,500	7,800	15,300
Diesel fuel costs	980	1,100	2,080
Other operating costs	3,000	2,100	5,100
Total operating costs	<u>11,480</u>	<u>11,000</u>	<u>22,480</u>
Financing costs			
Interest expense	2,000	2,800	4,800
Foreign exchange gain(loss)	0	0	0
Total financing costs	<u>2,000</u>	<u>2,800</u>	<u>4,800</u>
Projected Income before tax	<u>\$ 15,020</u>	<u>\$ 16,900</u>	<u>\$ 31,920</u>

The company would continue this rolling forecast process on an ongoing basis, continually forecasting and analyzing its critical variables to make quick and informed decisions to maximize shareholder value.

CONCLUSION

Leadership based on rolling forecasted data is a dynamic forward thinking process. The rolling forecast highlights changes in a firm's critical decision variables and lets management respond in a timely manner. This forward thinking analysis can provide superior results over the traditional budgeting process described in accounting texts. The discussion above shows students how rolling forecasts change the way budgeting should be performed in the dynamic and ever-changing world of commerce. Accounting and business students with BBRT leadership and process principle experience can add value to a business immediately upon embarking on a career. We thus encourage textbook authors and faculty to consider a wider inclusion of these topics in textbooks and the classroom.

AUTHOR INFORMATION

Thomas L. Zeller, Ph.D., MBA, CPA is professor of accountancy and university scholar/teacher in the Quinlan School of Business Administration at Loyola University Chicago. He teaches accounting information systems and strategic cost management courses at the graduate and undergraduate levels. He frequently speaks at conferences. He has published numerous articles and two books addressing financial statement analysis and health care financial measurement issues. His research has appeared in several journals including, *Issues in Accounting Education*, *Strategic Finance*, *Business Horizons*, *Healthcare Financial Management* and *Journal of Accounting and Public Policy*. Professor Zeller is a member of the American Accounting Association and American Institute of Certified Public Accountants. E-mail: tzeller@luc.edu

The late Lawrence M. Metzger, Ph.D., CPA, CMA, CFM (1955 to 2012) was a professor of accountancy and university scholar/teacher in the Quinlan School of Business Administration at Loyola University Chicago. His areas of teaching included nonprofit accounting, managerial accounting and financial statement analysis at the graduate and undergraduate levels. He published in a wide range of journals, including *The Internal Auditor*, *The Journal of Government Financial Management*, *Management Accounting Quarterly* and *Journal of Applied Business Research*. Professor Metzger was a member of the American Accounting Association and American Institute of Certified Public Accountants.

REFERENCES

1. Banhan, R. (2011). Let It Roll. *CFO*, 27(4) 42-47.
2. Bogsnes, B. (2009). *Implementing Beyond Budgeting*. Hoboken: John Wiley & Sons.
3. Durfee, D. (2006). Alternative Budgeting. *CFO*, 22(7) 28.
4. Hope, J., & Fraser, R. (2003). *Beyond Budgeting: How Managers Can Break Free from the Annual Performance Trap*. Boston: Harvard Business School Press.
5. Horngren, C., Datar, S., & Rajan, M. (2012). *Cost Accounting: A Managerial Emphasis*. Upper Saddle River: Prentice Hall.
6. Lamoreaux, M. (2011). Planning for Uncertainty. *Journal of Accountancy*, 33-36.
7. Montgomery, P. (2002). Effective Rolling Forecasts. *Strategic Finance*, 41-44.
8. Morlidge, S., & Player, S. (2010). *Future Ready: How to Master the Business Forecasting*. West Sussex: John Wiley & Sons, Ltd.
9. The Hackett Group. (2008). Hackett: Despite Prospect of Harsh Punishment by Wall Street, Most Companies Fail When Forecasting Earnings and Sales. Retrieved from: http://www.thehackettgroup.com/about/alerts/alerts_2008/alert_02122008.jsp