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EXECUTIVE DIGEST

Budgets and other lies: Evidence of bias in financial planning

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Abstract Budgets are considered by many to be a necessary evil. Within organizations, budgets are used to allocate financial resources to individuals who are charged with managing funds. This allows them to accomplish corporate goals and objectives. When reviewing the differences between actual and planned spending for a number of cost centers evidenced in data covering a 4-year period, it was noted that favorable variances exceeded unfavorable ones more than 50% of the time, although probability suggests that favorable and unfavorable results are equally likely to occur. As budgets are only best guesses about the future, these results indicate that planned spending was intended to manage uncertainty. In other words, the budgets were intentionally misstated—that is, they were lies. This Executive Digest explores ways of uncovering these lies. The consequences of intentional misstatement of planned spending are serious. In such cases, financial resources are not only misallocated, but also allocated in a suboptimal way. This means that future borrowing costs may increase, important projects could be delayed, and necessary operating expenditures are not made.

1. Your budget tells a story

> *"Never base your budget requests on realistic assumptions, as this could lead to a decrease in your funding."*
>
> — Scott Adams, creator of Dilbert

There are few things more certain in business than budgets and taxes. Taxes are imposed by focus outside the company; however, budgets are inflicted from within. A budget is many different things, depending on one's perspective. Some see it as a tedious chore that needs to be done (or nothing will get done because there will not be any money to do it). Others see it as an opportunity to plan and prioritize their activities for the coming year. At its most basic level, a budget is a tool for modifying behavior inasmuch as it tells people important information about you, such as where you spend your money and how much you have to spend. By monitoring and controlling someone's spending you can influence not only what they do, but also how they do it. Budgets are also a bunch of lies; no one can know with certainty what they will spend next year, or even tomorrow for that matter. For this reason, people make educated guesses about

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how much they will need to do the things they have to do. Managers usually know that their guess will be wrong and consequently add a little extra, just to be sure (i.e., lie). In this way, confusion arises between what they expect to happen and what is most likely to happen. For example, simply saying that you expect inflation to increase your operating costs does not mean that this is likely (or even probable).

Since budgets tell others so much about us—and because we all want to look good—we stretch the truth (i.e., tell a bigger lie), which creates a big problem. If an organization uses its budget for business planning, then its usefulness is seriously eroded if the information is, at the outset, knowingly incorrect. If bad information goes in, then bad information comes out on the other end, informing bad decisions. Budgets are developed to help achieve corporate goals and objectives and should be based on the company's strategy. By using funds to achieve strategic goals and objectives, the activities of cost center managers can be monitored and measured.

Managing a budget follows its development. Consider, for example, a cost center manager who must ensure that spending is in line with the financial plan that has been drafted. The estimate of planned activity will likely be based on last year's actual results, adjusted for expected changes in the coming period. Because the future is unknowable, it is expected that cost center managers will spend more than their budget allocation approximately half of the time. This means that an analysis of cost center results should show favorable variances about 50% of the time and unfavorable outcomes in the other 50% of situations. If this is not the case, it suggests that the budgets do not, in fact, represent a true estimate of probable outcomes (i.e., they have been 'fudged'). Previous studies have called this type of behavior *budget gamesmanship* (Bart, 1988). For most companies, analyzing budget variances is a monthly exercise that is essential for proper financial management. Comparing actual performance with planned activity is an important management control. Favorable results typically receive relatively little scrutiny by senior executives; but unfavorable outcomes—sometimes regardless of magnitude—are viewed as a cause for concern. Budgets influence behavior by providing incentives to responsibility center managers that encourage good performance. It is not surprising that budgets are used by these same managers to influence expectations and that this is done by managing the truth. But expectations and probabilities are two very different things, as shown by the results of this investigation.

The analysis that follows compares actual spending with planned spending for a number of cost centers used by a company. The data is taken from the financial results of an active enterprise over a period of 4 years. The entity examined operates in the transportation sector and has hundreds of millions of dollars in revenue and expenses; its asset base is in excess of $1 billion. The company has operated profitably since its inception, having never recorded a loss. To manage its spending, about 60 cost centers are used (the number of cost centers utilized varies by year, depending on the needs of management). The data is analyzed from two perspectives: by cost center and by type of operating expense. Total planned spending by cost center is exactly equal to total planned spending by type of operating expense.

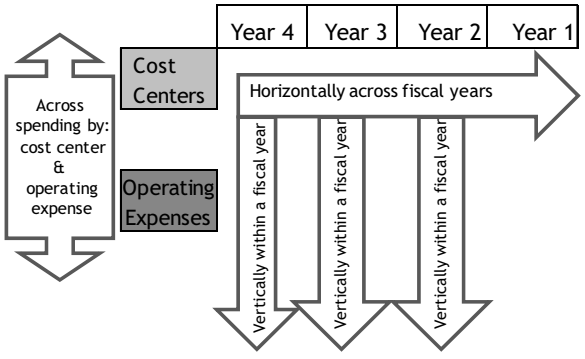
In this company, budgets are created for a number of responsibilities and these are aggregated at the level of the vice president—for example, the vice president of engineering or the vice president of operations. At a corporate level, variances are reviewed monthly by the senior management team, comprised of the CEO and the vice presidents. Top-level responsibility is assigned to each of the vice presidents and, in turn, they hold subordinates accountable for spending in their individual areas.

2. Evidence of bias

The analysis that follows is presented along three dimensions (see Figure 1).

- Vertically, favorable and unfavorable variances are analyzed by cost center and type of operating expense within a fiscal year.
- Horizontally, favorable and unfavorable variances are examined across fiscal years, again by cost center and type of operating expense.

Figure 1. Vertical, horizontal, and cross-sectional analyses of variances



- Dollar variances are examined by comparing the magnitude of favorable and unfavorable outcomes across cost centers and types of operating expenses.

Vertical, horizontal, and cross-sectional analyses assess whether random outcomes occur (as would be expected), or whether other factors may have influenced the variances observed.

2.1. Vertical analysis: Random outcomes within a fiscal year

Table 1 shows the percentage of favorable variances recorded for each of the 4 years examined (actual fiscal years are not shown to maintain confidentiality). A favorable variance is defined as any positive difference between budgeted funding available and actual spending regardless of the amount of the difference; in other words, the cost center did not spend more than its allotment. An unfavorable variance is any negative difference between budgeted and actual results without regard to the magnitude of the difference (i.e., overspending). Table 1 shows that, on average, almost two-thirds of the variances were favorable—which from a statistical perspective, assuming random outcomes, is an unlikely occurrence.

Table 2 examines the same budget variances based on the type of operating expense (i.e., janitorial services, temporary help). These spending types are applicable to many different cost centers. From the perspective of spending by type of operating expense, the percentage of favorable variances more closely approximates a random outcome, with some results slightly more than 50% and some somewhat less.

Figure 2 compares the percentage of favorable variances for cost centers and types of operating expenses. If the future is unknowable, then the chance of having a favorable rather than an unfavorable variance should be about 50% (i.e., outcomes should be approximately random). Based on the cost center data, during the 4-year period, there was clear evidence that there was a higher probability (i.e., greater than 50%) of achieving a favorable variance (see Table 1). When analyzing the same data by type of operating expense, the favorable and unfavorable variances were much closer to 50% (see Table 2) as would be expected for unknown future events such as the spending of budgeted amounts.

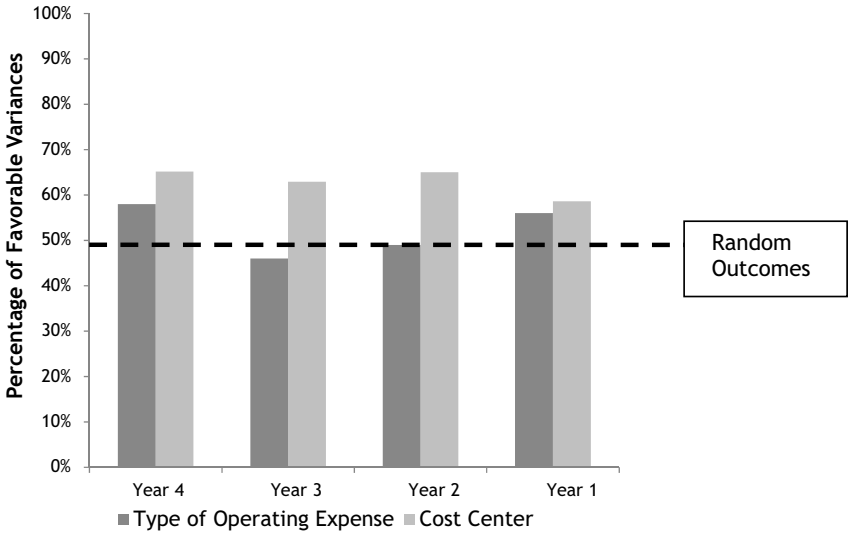
Table 1. Variance analysis by cost center

Fiscal Year	Number of Cost Centers	Number of Cost Centers with Favorable Variances	Number of Cost Centers with Unfavorable Variances	Favorable Variance Percentage
(Year 4 = most recent fiscal year)	(A)	(B)	(C)	(B/A)
Year 4	66	43	23	65%
Year 3	62	39	23	63%
Year 2	60	39	21	65%
Year 1	58	34	24	59%
4-Year Average	62	39	23	63%

Table 2. Variance analysis by types of operating expense

Fiscal Year	Types of Operating Expense	Number of Favorable Variances	Number of Unfavorable Variances	Favorable Variance Percentage
(Year 4 = most recent fiscal year)	(A)	(B)	(C)	(B/A)
Year 4	40	23	17	58%
Year 3	39	18	21	46%
Year 2	41	20	21	49%
Year 1	41	23	18	56%
4-Year Average	40	21	19	52%

Figure 2. Comparing favorable variances by cost center and type of operating expense



It is important to note that the total expenditures made, when viewed in terms of cost centers, were exactly the same as the total expenditures based on type of operating expenses. In other words, the same spending achieved different favorable and unfavorable outcomes when compared to the budget. At the responsibility center level, most variances were favorable but when analyzed in terms of operating expenses by type, favorable and unfavorable outcomes exhibited random properties. This strongly suggests that there was bias in preparing the budgets at the cost center (i.e., responsibility accounting) level, where favorable variances were more likely to be achieved. Favorable variances by type of spending are more random than those of cost centers, which are managed based on their bottom line. This means that responsibility center managers can move funds between different types of spending to manage overall budget performance. Consider the example of a company with three cost centers (CCs): CC-A, CC-B, and CC-C (see Table 3). These CCs manage spending for two types of operating expenses (OEs): OE-1and OE-2. The total budget for the cost centers and operating expenses is $1,000. By creatively moving cost center budgeted amounts between the two types of operating expenses, variance outcomes can be managed.

Per Table 4, the total actual spending by cost center (read horizontally = 995) is equal to the total actual spending by type of operating expense (read vertically = 995). Two-thirds of the cost centers showed favorable (F) variances; CC-A and CC-B were F, while CC-C was unfavorable. One-half of the types of expenses showed favorable variances where OE-1 was F and OE-2 was unfavorable. By using 'slush' funds for different types of spending (e.g., travel, meals, conferences, temps, supplies) to cover overspending, cost centers can manage performance expectations.

2.2. Horizontal analysis: Random outcomes across fiscal years

Table 5 shows that of the 78 cost centers analyzed over the 4-year period, 49% reported favorable variances for all of the budget years examined. They showed 100% favorable variances, all of the

Table 3. An example of managing cost centers by managing types of operating expenses

	Operating Expense (OE) 1			Operating Expense (OE) 2			
Cost Center (CC)	Budget ($)	Actual ($)	OE Variance (F$/U$)	Budget ($)	Actual ($)	OE Variance (F$/U$)	CC Variance (F$/U$)
CC-A	200	190	10**F**	100	105	5**U**	5**F**
CC-B	100	90	10**F**	300	305	5**U**	5**F**
CC-C	200	210	10**U**	100	95	5**F**	5**U**
TOTAL	500	490	10F	500	505	5U	5F

F = Favorable variance; U = Unfavorable variance

Table 4. An example of actual spending by cost center and type of operating expenses

Cost Center	Operating Expense 1	Operating Expense 2	Total Operating Expense
	(Actual $)	(Actual $)	(Actual $)
CC-A	190	105	295
CC-B	90	305	395
CC-C	210	95	305
TOTAL CC	490	505	995

time! The table also shows that over the 4 years, only 24% of the cost centers showed a favorable variance half of the time. This means that most of the cost centers showed favorable outcomes.

Table 6 shows that, of the 38 different types of operating expenses analyzed over the 4-year period, only 18% reported favorable variances for all of the budget years examined. The table also shows that 34% of the cost centers showed a favorable variance half of the time, meaning that the favorable outcomes occurred more randomly over the time period based on the types of operating expenses.

Figure 3 categorizes favorable variances over the 4-year period in terms of top, middle, and bottom thirds. The graph shows that cost centers had a higher proportion of favorable variances (top one-third) over the period. In comparison, operating expenses by type were more likely to be in the middle third, suggesting that they were more random.

2.3. Across spending: Outcomes for cost centers and operating expenses

The magnitude of the variances for the cost centers was noticeably less dramatic than that which was exhibited for the different types of operating expenses. This is illustrated in the graph in Figure 4 that plots the 4-year average dollar variance between planned and actual spending for cost centers and operating expenses (this is shown by the vertical axis on the graph).

The difference in the variances shows that spending is less predictable when responsibility has not been assigned specifically as it is for the cost centers. In Figure 4, there were fewer types of operating expenses—about 38 over 4 years—compared to the number of cost centers—approximately 78 over 4 years. The cumulative dollar amount of favorable variances during this period was about $11.8 million, which represents about 7% of the total budget for operating expenses during the 4-year period.

While variances were significant in relation to individual cost center budgets when compared to the total operating expense budget for the period, there were only a few instances where an unfavorable variance exceeded 1% of total planned spending for the year. In these situations, the variance related to services provided by large contractors for unexpected, but necessary (emergency) assistance to the company. In other words, the variances were explainable.

Table 5. Favorable variances for cost centers (CCs) over 4 years

	4-Year Favorable CC Variance Percentage	Number of CC with Favorable Variances	Percentage of Favorable Variances
	(Column A)	(Column B)	(Column B ÷ 78)
Top Third	**100%**	38	**49%**
	90%	0	0%
	80%	0	0%
Middle third	70%	4	5%
	60%	3	4%
	50%	19	**24%**
Bottom third	40%	0	0%
	30%	6	8%
	20%	8	10%
TOTAL Number of CC		78	100%

Table 6. Favorable variances for types of operating expenses (OE) over 4 years

	4-Year Favorable OE Variance Percentage	Number of OE with Favorable Variances	Percentage of Favorable Variances
	(Column A)	(Column B)	(Column B ÷ 38)
Top third	**100%**	7	**18%**
	90%	0	0%
	80%	0	0%
Middle third	70%	8	21%
	60%	0	0%
	50%	13	**34%**
Bottom third	40%	0	0%
	30%	1	3%
	20%	9	24%
TOTAL Number of OE		38	100%

3. Financial planning

The results of this analysis suggest three ways in which a company can better manage the risk associated with budget lies. They can do this by:

1. Comparing budget variances for cost centers with those by type of operating expense for a fiscal year (vertical analysis). If this shows relatively random favorable and unfavorable variances by type of operating expense and non-random results for cost centers, then cost center managers need to explain why this is happening.

2. Reviewing the history of cost center variances over a period of time (i.e., 4 years) to determine repeated favorable outcomes (horizontal analysis). This will indicate where there may be padding that needs to be addressed in the budget development process.

3. Analyzing the magnitude of the budget variances for cost centers relative to those of operating expenses by type (across spending analysis). If this shows larger variances (favorable or unfavorable) for operating expenses compared to cost centers, then the cost centers are probably managing expectations, or trying to stay within budget, rather than achieving strategic goals and objectives.

While it is likely no surprise that the evidence from this investigation indicates that cost center managers pad their budgets, the analysis also highlights the importance of tracking cost center performance to identify those managers who are most likely to engage in this type of behavior. In addition, this study suggests some ways in which untruthful budget projections can be identified and thereby dealt with proactively by senior management (Messer, 2009).

Figure 3. Comparing favorable variances by cost center and type of operating expense over 4 years

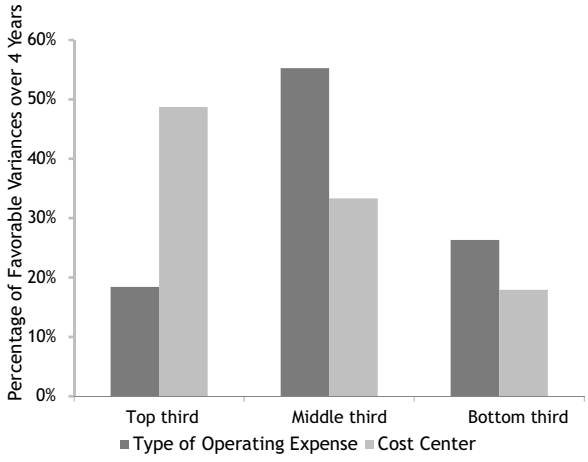
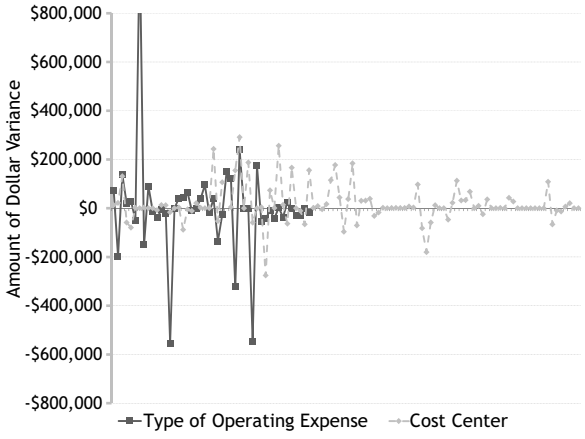


Figure 4. Comparing dollar variances for cost centers and type of operating expenses



Over the 4-year period included in the data analysis, almost half of the cost center managers showed positive budget variances every year. Rather than lauding their performance, senior executives should be suspicious of such results. These favorable variances are not harmless and represent a real loss to the company. When planned spending is misstated intentionally, financial resources are not only misallocated, but also allocated in a suboptimal way. This means that future borrowing costs may increase, important projects could be delayed, and necessary operating expenditures are not made (Hope & Fraser, 2000).

The purpose of budgets should be to determine the probability of outcomes (i.e., predicted revenues and expenses) and not to manage expectations. There are several well-established methods that facilitate making sound predictions about the future such as time series (or econometric) models used to plan revenues and regression analysis that determines suitable cost drivers for expenses. If expectations management becomes the basis for creating budgets, then the company's financial plan is increasingly more uncertain. While it is true that managers pad their budget requests to deal with uncertainty, the amount of this intentional misstatement is both unknown and varies by budget participant. Budgets are gamed because senior managers do not have a microlevel understanding of the activities and associated funding requirements of individual responsibility centers.

In this analysis, favorable outcomes were found to occur more often than would be predicted by random events, which strongly suggests that the budgets had been created to manage expectations. It also suggests that responsibility center managers had a reasonably good idea about their real budget needs and had provided a cushion in order to solicit favor from their superiors. While these managers may have saved the company some money, they also appropriated funds that could have been used by another manager, or for some new business opportunity. These unmet funding needs—if they are not foregone entirely—will be addressed through additional borrowing, along with related financing costs.

To suggest that budget gaming is acceptable because it is functional, as it helps manage expectations, means that suboptimal decisions will be made when allocating corporate capital. This undesirable behavior can be limited by initially identifying it and then providing appropriate remedies. Budgets can be improved by reducing the opportunities for gaming as well as using established methods to reasonably predict the future. While there may not be any certain facts in budgeting, the desired outcomes can be better managed when intentional untruths have been eliminated. Consider this: If budgets are intended to reduce uncertainty, then who is fooling who when they are deliberately—and knowingly—misstated?

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