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Using the APC Model to Identify Performance Issues in a County

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ABSTRACT

Performance measurement in governments is difficult, especially due to the challenges in measuring output. This paper presents a novel approach to evaluating a county government with a goal of identifying the problem areas using the APC model. An application is developed, the performance is evaluated, and problem areas are identified.

KEYWORDS: County government, multi-factor productivity, performance evaluation, productivity, price recovery, profitability

INTRODUCTION

Performance management systems have widely been employed and implemented by governments around the world. They have become a key aspect of current initiative to improve the efficiency, effectiveness and accountability of government organizations in many countries (Yang and Torneo, 2015). In the United States, there are differences within and across all levels of government with respect to performance measurement and implementation (Melkers and Willoughby, 2005). Following the enactment of the Government Performance and Results Act, federal agencies are held accountable for performance and result reporting. Today, federal government agencies are held to a higher standard on how the information they generate internally and to the public produces positive result to the entire nation (Pallanen, 2011). States and local government are also recognized for their advanced practices related to result-oriented systems (Ralph and Rusdi, 2012).

Local governments include cities and counties. During the budget process, governments forecast revenues and expenditures (Williams and Kavanagh, 2016). The budget process not only helps to prepare the next fiscal year revenues and expenditures, it also helps to see the trend of both revenues and expenditures and make proper decisions that will fit the organization's goals. Property taxes are the main revenue for the county selected in this study. Studying and monitoring how the property taxes are being used may reveal performance issues such as inefficiencies and other problem areas requiring managerial attention and action. This study focuses on this performance measurement using the APC (American Productivity Center) model. The rest of the paper is organized as follows: Literature review, Data collection and model setup, results and analysis, and conclusion.

LITERATURE REVIEW

The term “performance measurement” simply means the process of collecting and reporting data that can be used to summarize and assess the way a program is being implemented (Berenson, 2016). In government, it simply can be interpreted as the achievements of the various levels of government as well as the quality of achievements. Many establishments are using performance measurements to manage, and improve their programs as well as ensuring that they are producing the desired results. For nonprofit establishments, data and evidence are increasingly used for the management and improvement of programs as well as to demonstrate positive results for the clients they are required to serve (Micheli and Manzoni, 2010). The various levels of government are not left out in the use of performance measurement in managing and accessing activities. At the federal level, for example, certain laws such as the Government Performance and Results Modernization Act of 2010 (GPRMA) requires every department and agency to establish annual performance assessments of government programs. Also, nonprofit organizations that benefit from federal grant funding may have to report performance data to meet GPRMA requirements (Tatian, 2016).

As earlier mentioned, the importance of performance measurement to any organization, whether public or private can never be over emphasized. There are many performance measurement models. There comprehensive models such as Balanced Scorecard (BSC) on one end to more narrowly focused models such as single factor productivity that measures efficiency or productivity of labor, for instance, producing a single output. Total-factor measurement models are more appropriate for measuring performance at the organization level. Sometimes they are called multi-factor measurement models. Some of these models link productivity to profitability. One such model is the APC model. It was developed at the then American Productivity Center (Miller and Rao, 1989; Rao, 2000). Some applications have been developed using this model (Rao, 2006; Rao, 2007; Rao and Phusavat, 2013). The main purpose is to uncover and identify performance problem areas so that the administration can take action for a better performance.

DATA COLLECTION AND MODEL SETUP

Table 1 shows the county data for five fiscal years. It is important to mention that this study analyzes the data for the General Fund which is the main financial source in the county. Also, expenditures are just the ones related to the county’s operation. The main revenues are property taxes, and are calculated based on the tax rate shown in the table.

Once the data is setup, a series of calculations are made ultimately getting the contribution towards productivity, price recovery and profitability at the organization level, category level and resource level. The steps include the following: 1. Deflated values are calculated by multiplying current period quantities by base-period prices; 2. Change ratios are calculated for quantities, prices and values in each period; 3. the “productivity, price recovery and profitability contributions in dollars are calculated as follows” (Rao and Phusavat, 2013):

Productivity contribution =
*Change Ratio Quantity Outputs – Change Ratio Quantity Inputs * Value Input Previous Qtr (1)*
Profitability contribution =
*Change Ratio Value Outputs – Change Ratio Value Inputs * Value Input Previous Qtr (2)*
Price Recovery contribution = Profitability contribution - Productivity contribution (3)

These contributions from the top level, through category level and down to the resource level are plotted so that the trends are easily identified and the management can zero in on the problem areas.

Table 1. Basic data: quantities and prices of inputs and outputs

	QUANTITY					PRICE				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
	Q1	Q2	Q3	Q4	Q5	P1	P2	P3	P4	P5
Property taxes	225,909,286	226,183,593	234,366,960	258,566,909	245,407,818	$0.355259	$0.355259	$0.355259	$0.345187	$0.335130
TOTAL Revenues										
Salaries-Department Head	19	19	19	19	19	62,220	63,193	66,913	68,106	69,311
Salaries-Official	32	32	32	32	32	58,751	58,606	59,431	62,429	63,507
Salaries-Regular	1,012	1,012	1,022	1,035	1,052	24,048	23,886	24,024	23,913	24,589
Salaries-Overtime	1,012	1,012	1,022	1,035	1,052	997	983	1,202	1,469	1,848
Salaries-Court Reporters	15	15	15	15	15	48	-	-	-	67
Salaries-Temporary Employees	43	43	43	43	43	9,604	8,867	9,095	9,054	8,503
Salaries-Longevity Pay	238	238	238	238	238	878	884	861	830	830
Salaries-Supplemental Pay	82	82	82	82	82	6,607	7,453	7,039	7,249	7,185
Employee Benefits	1,012	1,012	1,022	1,035	1,052	8,552	8,754	9,060	9,320	9,664
Other Personnel Expense	1,012	1,012	1,022	1,035	1,052	383	313	297	324	233
Labor										
Office expense (per personnel)	1,026	1,026	1,026	1,026	453	$1,036	$1,032	$1,015	$1,126	$2,417
Food & Kitchen	908	908	908	908	908	$1,725	$1,636	$1,728	$1,655	$1,684
Professional services	47	47	47	47	47	$22,321	$20,762	$20,856	$23,421	$28,215
Special Personnel	139	140	142	141	146	$29,247	$26,602	$25,325	$28,530	$29,291
Capital Outlay	4	4	4	4	4	$110,000	$110,000	$110,000	$170,000	$110,000
Travel	1,026	1,026	1,026	1,026	1,027	$159	$170	$164	$165	$195
Operation										
Maint & repairs buildings	73	73	72	72	76	$29,968	$22,098	$25,400	$26,969	$25,223
Maint & repairs vehicles	183	209	204	207	207	$7,991	$5,150	$5,997	$6,289	$6,159
Maintenance										
Contractual Services (kwt/hour)	833,000	833,000	833,000	833,000	833,000	$2	$2	$2	$2	$2
Energy										
Telephone	1,012	1,012	1,022	1,035	1,052	$400	$400	$400	$400	$400
Internet	1,012	1,012	1,022	1,035	1,052	$200	$200	$200	$200	$200
Telephone										
Other Services & Charges (debt service)	5	5	5	5	5	$946,953	$1,075,639	$1,007,451	$1,137,255	$1,019,755
Other Expenses	850	850	850	850	850	$300	$300	$300	$300	$300
Miscellaneous										
TOTAL										

RESULTS AND ANALYSIS

Figure 1 shows the county's overall profitability, productivity, and price recovery. Productivity contribution shows the performance without any effect of price changes in inputs and outputs. Basically, it removes any inflationary factors. Price recovery reflects the price changes in inputs and outputs. Profitability is the sum of the productivity and price recovery contributions.

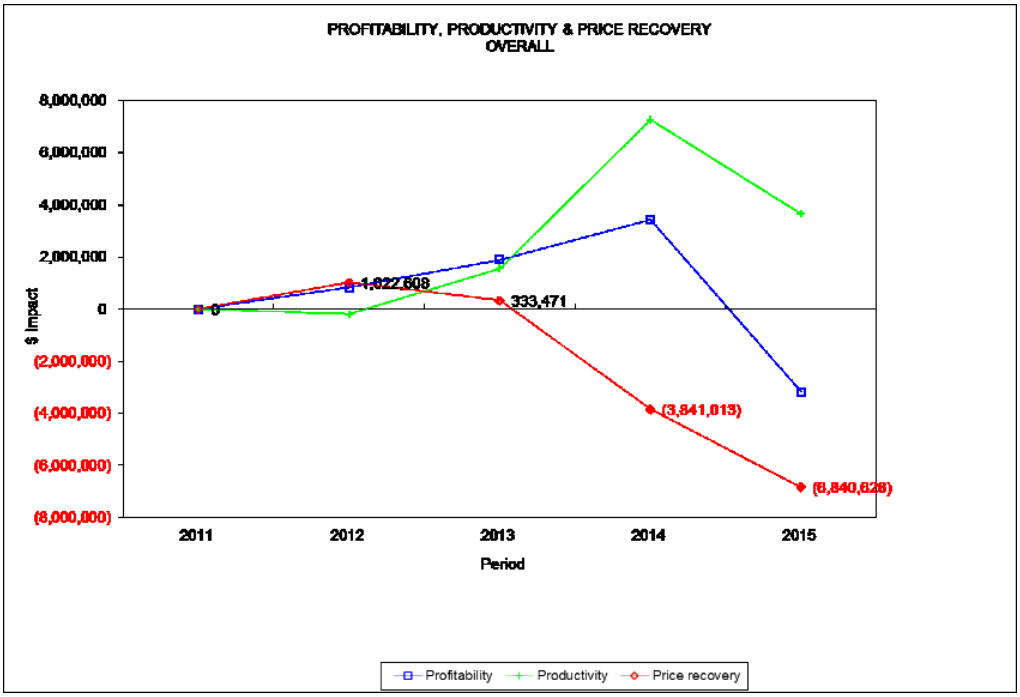

Figure 1. County's overall performance

In Figure 1, overall profitability of the county looks great until 2014. Apparently, this positive trend is primarily due to productivity. Overall price recovery seems to be a problem. It took major dive in 2014 and continued in 2015. A negative price recovery contribution of $3.8 million in 2014 and $6.8 million in 2015 is a major problem. This requires drill down into categories and actual resources causing this problem.

Like the overall performance chart shown in Figure 1, one could generate charts for each category and each resource. For analysis and discussion purpose, only few charts that point to major concern are shown here. Major problem category seems to be Labor. Figure 2 shows labor performance. In 2015, the overall price recovery contribution was -$6.8 million of which -$5.1 million from labor. This is a serious problem and requires further drill down into resources causing the problem.

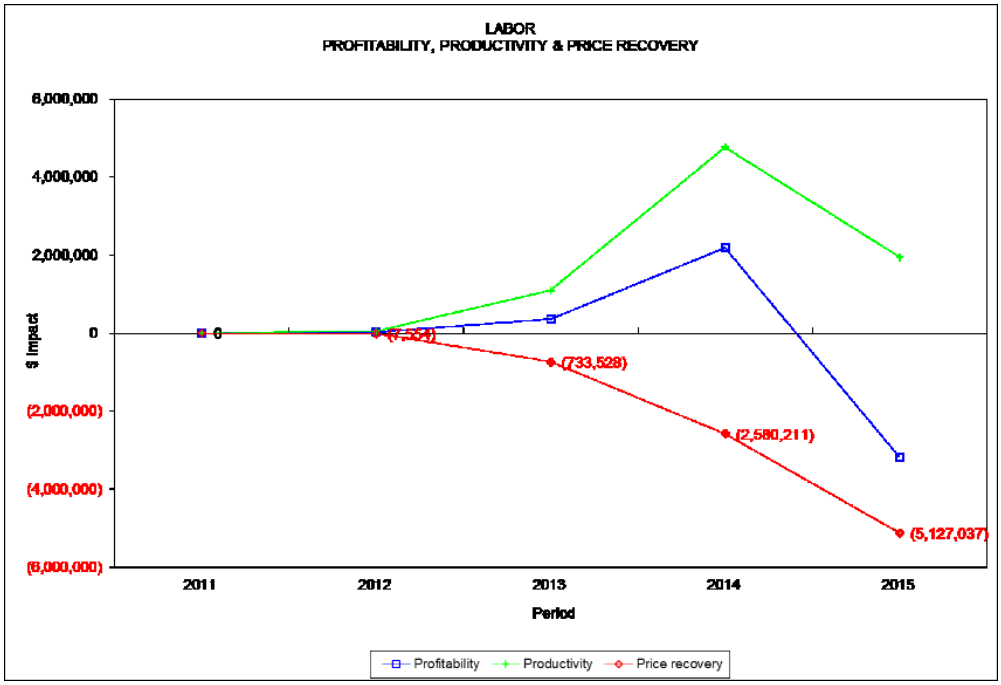

Figure 2. County's Labor performance

Upon inspection of the resource performance charts under labor category, Salaries-regular and Employee Benefits stand out. Figures 3 shows the performance of Salaries-regular. Out of -$5.1 million of labor price recovery, -$2.1 million contributed from Salaries-regular. This means that on average salaries have gone up more than the tax rate. Although this looks bad on the administration, a close inspection of Table 1 shows that tax rates have gone down in 2014 and 2015. That is good for the tax payers, not so good for the administration in terms of the appearance of performance.

CONCLUSION

Performance measurement makes organizations perform better. It is important that counties measure performance, identify problem areas and take timely action to improve performance. If the tax-payer money is not managed properly, sooner or later they will find out and make a noise as to what is happening with their local government. This paper described a novel approach to using the APC model for measuring and evaluating county performance. This application could be developed in any "revenue-generating" organizations. This paper should be of interest to any government administration and the researchers interested in public administration. Further applications could be developed for individual entities controlled or managed by local governments.

REFERENCES

References available upon request