



Revenue Forecasting Approach Towards Public Sector Wage Bill Management Dilemma in Kenya

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Abstract: The Kenyan government has been working towards achieving fiscal sustainability in wage bill expenditure since independence. Fiscal sustainability is key to achieving economic growth and progress as most resources would be channeled to development expenditure. The internationally recognized level of wage bill to revenue ratio is between 30%-40%. However, this key ratio is not being achieved in Kenya as the Salaries and Remuneration Commission and Parliamentary Budget Office of Kenya reports indicate that in the fiscal year 2012/13, it was 47%. The reports further indicate that the ratio has been within the range 47%-49% since the fiscal year 2009/2010 to 2012/13. Notable is that revenue forecasts essentially exist to help in budget formulation. Why then would the public wage bill management be a huge task to the government since independence? This study sought to establish whether revenue forecast has an effect on wage bill management in Kenya. Causal research design was used to establish the cause and effect relationship between the independent and dependent variable. Purposive sampling was employed in choosing 13 fiscal year budget data from the fiscal year 2000/01 to 2012/13. Simple linear regression model was employed in establishing the degree and magnitude of the relationship between the variables. A t-test and F-ratio were applied to test hypothesis and overall significance of the regression model at 5% significance level. Findings of this study indicate that revenue forecast within the 13 fiscal year period under study has significant effect on wage bill management in the context of wage bill to revenue ratio. This is an implication that revenue forecasts can help in managing the wage bill.

Keywords: Wage Bill Expenditure, Fiscal Sustainability, Wage Bill to Revenue Ratio, Revenue Forecast, Budget, Optimal Resource Allocation

1. Introduction

Revenue forecast refers to the amount of resources in terms of cash that the government expects to raise from various sources of revenue [6] & [7]. The revenue forecasts form a basis for budgeting [2]. This suggests that public sector wage bill which is an item in budgeting has a direct relationship and hence, revenue forecast may form a basis of managing the wage bill. The amount expected to be raised helps the government to allocate the resources to development and recurrent expenditures and to be able to determine which amount to be borrowed to finance the expenditure deficits [8] & [9]. This implies that in the budget process of any unit of government, the revenue forecast sets

the parameters for the allocation of expenditures among competing priorities. [1] Agrees with this idea that revenue estimates have an influence on all public expenditure of a country. It can therefore be noted that revenue forecast can be used to manage public sector wage bill.

[9] notes that revenues are typically forecasted 18 to 24 months prior to the beginning of each fiscal year and this may have a consequence of a potential substantial error. These errors arise from dynamic estimation methods adopted by the government at a particular time [1]. This may mean that errors made on estimation of revenues may end up causing errors in expenditure allocation. The result of this expenditure allocation error is non achievement of expected results of a budgeting process [3]. This means that achievement of a wage bill to revenue ratio of between 30-

40% as required internationally may require accurate revenue forecasting so that when budgets are prepared, achievement of this range of wage bill to revenue ratio is attained. The errors made in revenue forecasting may be overestimation or under estimation in nature [4]. It can be noted therefore that the government may develop fiscal policies of all expenditure items including the wage bill through use of forecasts. [4] argues that one important determinant of a state's ability to conduct reasonable a fiscal policy is the quality of its revenue forecasts. Sensible deliberations about expenditures cannot be made in the absence of accurate forecasts [4]. Hence, the public sector wage bill may not be managed without accurate forecasts.

In Kenya the wage bill to revenue ratio has been hovering between 49%-47% in the fiscal years 2008/09 to 2012/13 [5]. According to [5] report, the Kenyan public sector wage bill from 2008/09-2012/13 fiscal years were 240 billion, 280 billion, 320 billion, 320 billion, 360 billion and 440 billion respectively. This shows an increased trend of public sector wage bill in the fiscal years aforementioned. The report further notes that the revenue also had an increasing trend in the periods with 720 billion in 2008/09, 860 billion in 2009/10, 960 billion in 2010/11, 1.1 trillion in 2011/12 and 1.41 trillion in 2012/13. This may imply that revenues and public sector wage bill may be positively related. However, the report states that the wage bill as a share of revenue in percentage had a decreasing and increasing trend patterns from the period 2008/09-2012/13 recording the following figures: 49.3%, 47.6%, 47.1%, 48.1% and 47.9% respectively. This may imply that revenue forecasts may not have been used in determining the level of wage increments and further employments.

Comparatively, countries like Zambia, Mozambique, Namibia and Zimbabwe have had high wage bill to revenue ratios in the period 2003, 2008, 2003, 1995 and 2010 respectively recording the following values of wage bill to revenue ratio in the aforesaid periods: 52.2%, 50.6%, 41.1% and 41.5% respectively [11]. This illustrates that the wage bill in these countries may not be properly managed as per the internationally accepted standards. Countries like Tanzania, Kenya, South Africa and Zimbabwe in the periods 2003, 2008, 2009 and 2003 respectively recorded the following ratios in the aforesaid periods respectively: 31.4%, 31.5%, 32.9% and 38.4% [11]. This may imply that the countries managed the wage bill according to internationally accepted standards. Countries like Botswana and Malawi in 2003 had a ratio of 21.8% and 18.7% respectively an indication that the civil service at that time may not have been adequate to offer the expected services and hence there was more revenues lying idle without utilization to spur economic growth.

2. Statement of the Problem

Public sector wage bill management is important to all governments since it aims at controlling and reducing government recurrent expenditure. The public sector wage

bill level should be controlled to meet the internationally acceptable levels so that other important development and recurrent expenditure items can be financed. According to the Parliamentary Budget office, the internationally acceptable level of wage bill to revenue ratio is 30%-40%. However, a report by [10] indicates that in the fiscal year 2012/2013, the Kenya's wage bill to revenue ratio was 47%. This ratio surpasses the international standard levels; indicating that some recurrent and development expenditure may be underfinanced. Government revenue forecasting exists for planning, allocation and controlling of resources to ensure operation within the expected revenues. This raises the question as to why the public wage bill has been spiraling in Kenya yet revenue forecasting is expected to guide in making decisions of further employments and pay rises. Thus, this study aimed at determining whether revenue forecast can help in managing the public sector wage bill so as to redirect other resources to development and other recurrent expenditures that are also of importance to the growth of an economy.

3. Methodology

Causal research design was used because it tests causal relationships between variables. Purposive sampling was applied in extracting revenue forecast and public sector wage bill management data from budgets of 13 fiscal year periods from 2000/01 to 2012/13. The study used 13 fiscal year budgets from the fiscal year 2000/01 to 2012/13 because of the common characteristic that the budgets within this period were prepared based on the Medium Term Expenditure Framework (MTEF) format implemented by the Kenyan government in the year 2000. Data was collected from the National Treasury of Kenya. Simple linear regression model was used to determine the relationship between the variables. An F-test and Student t-test were applied respectively to test the overall significance of the regression model and test the hypothesis at 5% significance level. The following was the model used to predict the relationship between dependent and independent variables.

$$w/rev = \beta_0 + \beta_1 RevF + \varepsilon$$

Where, w/rev is wage bill to revenue ratio for period t , β_0 is the constant representing the wage bill to revenue ratio when the revenue forecast is zero, β_1 is the fixed individual effect of revenue forecast on the wage bill to revenue ratio for period t and ε is the random error term which represents the effect of other factors affecting the wage bill to revenue ratio not included in the model. The error term is assumed to be normally distributed with zero mean and constant variance.

4. Results and Discussion

The objective that the study sought to determine was the effect of revenue forecast on public sector wage bill management by the government of Kenya. The correlation is shown in Table 1.

Table 1. Correlations.

		WAGEBILLT OREVENUE	RevF
Pearson	WAGEBILLTOREVENUE	1.000	-.849
Correlation	RevF	-.849	1.000
Sig. (1-tailed)	WAGEBILLTOREVENUE	.	.000

The Pearson correlation coefficient of wage bill to revenue ratio and revenue forecast is -0.849 with a p-value (0.000) which is significant at 5% significance level. This suggests existence of a strong negative relationship between Revenue

forecast and wage bill to revenue ratio.

4.1. Regression Analysis

The study sought to determine the causal relationship between revenue forecast on public sector wage bill management. The correlation coefficients (R) indicate the correlation between dependent and independent variable predicted by the model. The coefficient of determination (R²) determines the changes in dependent variable as explained by independent variable. Table 2 is a summary of the regression model.

Table 2. Model Summary.

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.849 ^a	.721	.696	7.52094	.721	28.428	1	11	.000	1.059

The (R²) is 72.1% which means that 72.1% of the variations in the wage bill to revenue ratio can be explained by changes in revenue forecast in the model and 27.9% of variation in wage bill to revenue ratio is explained by other factors not included in the model. The results indicate that the model is reliable in predicting the changes in wage bill to revenue ratio.

Table 3. Overall Significance of Model.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1607.998	1	1607.998	28.428	.000 ^a
	Residual	622.210	11	56.565		
	Total	2230.208	12			

Table 3 is an ANOVA for the model. The F-test is significant at 5% level of significance (F(1,12)=28.428, p<0.05). The implication is that revenue forecast significantly explains the changes in wage bill to revenue ratio.

Table 4. Regression Coefficients for the Model.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	77.710	4.419		17.586	.000	67.985	87.436
	RevF	-4.510	.000	-.849	-5.332	.000	.000	.000

Table 4 shows the intercept and the slope coefficients for the model. The aim of the study was to determine is the effect of revenue on public sector wage bill management. The intercept coefficient is 77.710 and the slope coefficient for revenue forecast is -4.510 with a p-value (0.000<0.05). This leads to a conclusion revenue forecast has a statistically significant effect on wage bill to revenue ratio.

4.2. Model Specification

$$w/rev = 77.710 - 4.510 RevF$$

According to the equation holding revenue forecast to be zero would result to a wage bill to revenue ratio of 77.710%. This implies that if the government does not carry out revenue forecasting, 77.710% of the actual revenues generated will pay public wage bills. This may be as a result that optimum allocations may not be done without revenue forecasts. The consequence of this may be a stagnated economy because little or no infrastructural development will be done as most resources will be channeled to paying salaries and wages of public servants. A 1% increase in revenue forecast would lead to a decrease of wage bill to revenue ratio by 4.510%. This results to a conclusion that

wage bill to revenue ratio can be managed at the international range of between 30-40%, if wage bill will increase less proportionately as compared to increase In actual revenues. Consequently, before salary increase and further employments are done, the contribution of such increments and employments to the economy and the revenues of a country should be evaluated.

5. Conclusion

The researcher sought to determine the effect of revenue forecast on public sector wage bill management. The findings indicate that revenue forecast has a relationship with public sector wage bill management. This would result to a conclusion that revenue forecast can be used effectively to manage the public sector wage bill through allocation process and determination of salary increment and further employments.

Recommendations

The government of Kenya should adopt the use of revenue forecast to manage the wage bill to revenue ratio at the

international recognized level of between 30-40%. The revenue forecast would guide in understanding when to increase salaries and carry out further employments and at what level of such increase and further employments is to be done. There should be less proportionate increase in wage bill as compared to the actual revenue generated. This can be effectively achieved through program based budgeting system which considers the output before any allocation is made.

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