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The Relationship Between Government Expenditure and Economic Growth Evidenced From Four Eastern African Countries

Samuel Atsibha Gebreyesus

Consultant and lecturer, Ethiopian Civil Service University Addis Ababa, Ethiopia

*Email gebreyesus.samuel.atsibha@unec.edu.az

sasaamiya@gmail.com, ORCID: 0000-0001-6508-9753

Abstract

The study assesses the relationship between government expenditure and economic growth in Ethiopia, Kenya, Tanzania, and Rwanda with the objective of comparing their economic growth. Panel (time-series cross-section) data over the period of 2011 to 2020 was used for the analysis. A descriptive analysis was carried out with the aim of providing an overview of the economic growth by comparing the nations, and a linear regression model was undertaken between the economic growth and the government expenditures of the respective countries. The result revealed that the four countries' economies grew at a fluctuating rate over the study period. Ethiopia had a substantially larger GDP than the other countries Kenya's even though it had the lowest GDP per capital in the group, while Kenya had a much higher GDP per capital Compared to other nations. Kenya's GDP per capita was double of Ethiopia's and Tanzania's at the end of the study period. Based on the regression analysis results, there is a positive but insignificant relationship between government expenditure and economic growth in the four countries. Governments of developing nations should use scarce resources effectively and efficiently to improve the living standards of their citizens. Research in this area plays a vital role in improving government resource management.

Key words: GDP, expenditure, economic growth, GDP per capital, and regression

1. Introduction

Economic growth is one of the most important indicators of a country's progress in terms of living standards, employment, and wealth. It denotes the signs of strengthening general economic conditions. The objective and purpose of a country's revenue collection is to fund government expenditure. Modern governments are concerned not only with performing basic responsibilities but also with encouraging the economic development of their respective country [1]. Fiscal policy is a key tool for reducing short-run production and employment fluctuations. Meanwhile, fiscal policy take the spotlight in policy debates in both developed and developing economies on macroeconomic challenges such as high unemployment, insufficient national savings, unsustainable budget deficits, and massive public debt burdens. During the worldwide economic depression of the 1930s, both developed and emerging nations' government sectors played a critical role in promoting economic growth and development, as recommended by Keynes. Every economy tries to stimulate economic development in such circumstances by boosting government spending and lowering taxation. These empirical results, as well as Keynesian theoretical expression, attracted economists' and policymakers' interest in fiscal policy as a stabilizing influence [2]. Public spending is a key tool for influencing the long-term viability of government finances through fiscal balances and government debt. Furthermore, public spending may be used to achieve additional goals such as increased output, employment, and redistribution, all of which contribute to economic well-being. Tax policy, on the other hand, may be utilized to achieve fiscal policy goals such as equitable distribution of income and wealth, efficient resource allocation, and economic stabilization. Taxes have a variety of effects on economic growth rates, such as deterring people and businesses from saving and investing, inhibiting workers from learning new skills, and so on.

In developing countries, public spending is critical to economic growth. Developmental and non-developmental public expenditures are the two categories of public spending. The government's development spending is primarily focused on infrastructure, industry, health care, and educational institutions, among other things. Non-developmental expenditures are generally maintenance-related and include things like law and order, defense, and administrative services, among other things. The influence of taxes, spending, and budget balance on numerous fiscal matters such as resource allocation efficiency and factor accumulation rate is projected to affect a country's economic growth through the effects of government size on taxation, expenditure, and budget balance [3]. Economic theory does not always lead to firm findings on the impact of government spending on economic growth. Most economists would agree that there are times when lower levels of government expenditure would be beneficial to economic growth and other times when higher levels of government expenditure would be beneficial. If government expenditure is cut to zero, it is likely that economic growth will be limited since enforcing contracts, protecting property, and constructing infrastructure will be difficult. To put it another way, some government spending is required for the rule of law to function effectively [4]. The expansion of the public sector in tandem with continued economic growth has become a commonly acknowledged truth. In this context, Wagner's law of increasing state activity, which postulates a long-term positive link between economic growth and government activity, has gotten a lot of attention. This nexus is explained by Wagner as a continuous "cultural and economic growth" in which private economic activity replaces state action. In general, empirical research on Wagner's law has concentrated on the cross-sectional and time-series relationships between government expenditure and national revenue [5]. The effect of government services on private decision-making in general and, more specifically, the impact of government expenditure on long-run economic growth Government expenditure, according to macroeconomic theory, notably the

Keynesian school of thought, increases economic development. As a result, government spending is viewed as an external factor that alters aggregate production [6].

2. Literature Review

According to Keynes (1946), Government expenditure has been proven in economic theory to be either positive or negative for economic growth. Many components of public expenditures, especially those that are recurring, can contribute significantly to economic development through indirect impacts on aggregate demand, according to conventional Keynesian macroeconomics. Government consumption, on the other hand, may push out private investment, reducing short-term economic benefit and reducing long-term capital accumulation [7]. Economic system is determined in diverse ways based on the actors involved in economic activities and government planning's history, culture, and connection. As a result, the economic system cannot simply be classified as a market or a controlled economy. Even market economies like the United States, the United Kingdom, and Japan are not fully free of government planning. On the other hand, Russia and China both have planned economies that incorporate many aspects of the market economy [8]. Many individuals believe that government spending has a significant impact on economic success. Public investment in basic infrastructure is a necessary requirement for the economy to run smoothly. Education and health-care expenditures have also been demonstrated to boost human capital creation. However, many economists believe that public spending is an area where severely ineffective white elephants might be identified. The role of government expenditures in attaining fiscal policy goals of seeking economic development, equity, and preserving macroeconomic stability has emerged as one of the major issues facing developing countries. Governments' major task in recent years has been to build capital and infrastructural bases in order to support economic growth and social well-being for their citizens. As a result, governments have increased expenditure on social and welfare programs [9].

Although economists, policymakers, and politicians have long debated the link between government spending and economic growth, the dispute continues. The debate centers on whether government size has a positive, negative, or inconsequential influence on economic growth. On this divisive issue, several schools of thought have reached different conclusions. According to the Keynesian theory, government spending boosts economic growth. The more money a government spends, the faster the economy grows [10].

3. Review of Empirical Findings

There is a variety of empirical research on the impact of government expenditure on economic growth. Some empirical data supports the importance of government expenditure in economic growth, while others argue against it [11]. Using the OLS and GLS methods, investigated the impact of government expenditure on economic growth. The findings show that effective government expenditure boosts the economy, whereas the economy is impeded by non-productive government expenditure. A study in India by [2] conducted using Simple Linear Regression, which found a substantial association between total and sectoral government expenditure and each of the macroeconomic indices; the research found that government expenditure has a significant impact on the country's economic growth. The findings of a panel data regression analysis conducted in eight districts/cities in Indonesia (Baten) from 2010 to 2017 reveal that government expenditure has a positive impact on economic growth [13]. The impact of government expenditure on economic growth in Nigeria from 1970 to 2019 was studied using an Autoregressive Distributed Lag (ARDL) model, and the study's findings revealed that government expenditure has a positive and significant influence on economic growth [14]. A research by [15] examines how government spending influenced economic development in developed, developing, and underdeveloped nations from 1980 to 2012 using the unbalanced panel technique. The findings show that government expenditure has a

significant positive impact on economic growth in developing nations but a significant negative impact on economic growth in developed countries. A research conducted by [16] on government spending, efficiency, and economic growth in low-income countries in Sub-Saharan Africa. The study uses Im-Pesaran-Shin and Fisher ADF tests to run panel unit root testing. The findings show that increased government spending stimulates low-income nations' economic growth in Sub-Saharan Africa.

4. Materials and Methods

The study used panel (time-series cross-section) data from Ethiopia, Kenya, Tanzania, and Rwanda over the period of 2011 to 2020. A descriptive analysis was conducted with the aim of providing an overview of the conditions of economic growth and government expenditure in the four nations during the period. A linear regression model was used to examine the relationship between government expenditure and economic growth. Secondary data about the government's expenditure growth rate, gross domestic product, and GDP per capita were obtained from the World Development Indicators of the World Bank (Table1, Table 2).

Table 1, GDP (Annual %), GDP per Capital, and Government Expenditure Growth% GDP

Years	GDP growth (annual %)				GDP per capital (Current US$)				Government expenditure Growth (Annual % GDP)			
	Ethiopia	Kenya	Tanzania	Rwanda	Ethiopia	Kenya	Tanzania	Rwanda	Ethiopia	Kenya	Tanzania	Rwanda
2011	11.18	5.12	7.67	7.96	354.48	1085.49	781.43	668.50	2.13	2.65	5.30	3.88
2012	8.65	4.57	4.5	8.64	467.08	1271.82	867.86	725.17	-0.26	13.51	13.30	15.78
2013	10.58	3.80	6.78	4.72	499.53	1354.82	970.34	722.89	12.33	-2.41	3.72	-0.17
2014	10.26	5.02	6.73	6.17	566.93	1462.22	1030.08	743.56	18.04	3.76	6.07	20.71
2015	10.39	4.97	6.16	8.86	640.54	1464.55	947.93	751.08	3.79	13.68	9.57	5.07
2016	9.43	4.21	6.87	5.97	717.12	1525.24	966.50	744.76	13.64	5.29	3.21	9.22
2017	9.56	3.82	6.79	3.98	768.52	1633.49	1004.91	772.32	8.30	6.23	1.08	7.36
2018	6.82	5.63	5.44	8.58	771.52	1794.09	1042.84	783.64	3.64	6.98	1.99	5.08
2019	8.36	4.98	5.80	9.46	855.76	1912.65	1085.88	820.15	12.09	6.96	2.35	17.51
2020	6.06	-0.32	2.00	-3.36	936.34	1878.58	1076.47	797.86	18.73	4.32	7.38	1.92

Source: World Bank (2020)

Table2, Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
GDP Ethiopia growth (annual %)	10	5.12	6.06	11.18	9.13	1.67
GDP Kenya growth (annual %)	10	5.95	-0.32	5.63	4.18	1.69
GDP Tanzania growth (annual %)	10	5.67	2.00	7.67	5.87	1.63
GDP Rwanda growth (annual %)	10	12.82	-3.36	9.46	6.10	3.81
GDP per capital (Current US$) of Ethiopia	10	581.86	354.48	936.34	657.78	184.83
GDP per capital (Current US$) of Kenya	10	827.16	1085.49	1912.65	1538.30	269.06
GDP per capital (Current US$) of Tanzania	10	304.45	781.43	1085.88	977.42	94.77
GDP per capital (Current US$) of Rwanda	10	151.65	668.50	820.15	752.99	43.23

Source: Software Package for Social Science Result

5. Result and discussion

As can be seen from Table 1 and Table 2, the GDP annual % growth rate, GDP per capita, and government expenditure growth % of GDP, over the specified periods of the four countries can be compared. The GDP annual growth rate of Ethiopia shows a remarkable growth rate from the period 2011 to 2015 with double digit growth, and achieving the highest in 2011 (11.18). However, starting from 2016 to 2020, it exhibits consistent positive growth, with the lowest achievement in 2020 (6.06), but it is still the leading country among the four countries over the specified period and with a mean value of 9.13. In the case of Kenya, the GDP annual growth shows an irregular growth pattern, with the highest growth rate in 2018 (5.63) and the lowest growth rate in 2020 (-0.32) and a mean value of 4.18. In the case of Tanzania, it shows a relatively stable GDP growth rate with the highest achievement in 2011 (7.67) and the lowest rate in 2020 (2.00) and a mean value of 5.87. In the case of Rwanda's GDP growth rate, it shows a very fluctuating rate, having achieved the highest in 2019 (9.46) and the lowest in 2020 (-3.36) and a mean value of 6.10. On the average GDP growth rate parameter, Ethiopia, Rwanda, Tanzania, and Kenya placed first, second, third, and fourth, respectively. The effect of COVID 2019, which has a huge impact on economic growth throughout the world, was shown in all of the nations under consideration, with the lowest GDP in 2020.

In terms of GDP per capita, Kenya achieved the highest in 2019 (1,878.58) and the lowest in 2011 (1,085.49). Tanzania had the highest GDP per capita of 1,085.55 in 2019 and the lowest GDP per capita of 781.43 in 2011. Rwanda's highest GDP per capita was 820.15 (2019) and the lowest growth rate was 668.50 (2011). Finally, Ethiopia has the highest GDP per capita at 936.34 (2019) and the lowest at 354.48 (2011). Kenya's GDP per capita income is the highest among the four nations. Tanzania's maximum GDP per capita income is almost equal to Kenya's minimum GDP per capita income, while the GDP per capita of Kenya at the end of the period (2020) is greater than double that of Ethiopia and Rwanda.

When we compare the four nations using the average GDP per capita income parameter, the average GDP per capita income of Kenya during the specified period is 1,538.30, which is the highest average among the nations. Followed by Tanzania, with an average GDP per capita of 977.42, Rwanda ranked third with an average of 752.99, and Ethiopia placed fourth with an average of 657.78. According to the World Bank (2020), Kenya and Tanzania fall under the category of lower-middle income economies ($1,046 to $4,095),

while Ethiopia and Rwanda fall under the low-income economies ($1,045 or less). Based the Worldwide countries' GDP Ethiopia is ranked 60th with 107,645 million US dollars, Kenya is ranked 64th with 98,843 million US dollars, Tanzania is ranked 74th with 62,410 million US dollars, and Rwanda is ranked 143rd with 10,093 million US dollars World Bank (2020). A country's GDP per capita is calculated as a country's gross domestic product (GDP) divided by its population. As we can see from the GDP per capita parameter, Ethiopia is the least, but with the largest GDP. The reason for the situation is that the population size of Ethiopia is almost double that of Kenya and Tanzania, and ten times that of Rwanda. The Ethiopian government's proactive and leadership role in creating socio-economic policies has been at the heart of the country's excellent economic and social performance. The government has been spending extensively on economic and social infrastructure, simplifying public services, reforming the tax collection system, and assisting small and medium-sized firms (SMEs), among other things, in order to make Ethiopia a middle-income country by 2025 [17]. The developmental state paradigm has resurfaced as a development option that emphasizes the role of government and market integration. Ethiopia, as one of the nations in Sub-Saharan Africa (SSA), has committed to implementing the developmental state model by tailoring the ideology to its own circumstances [18].

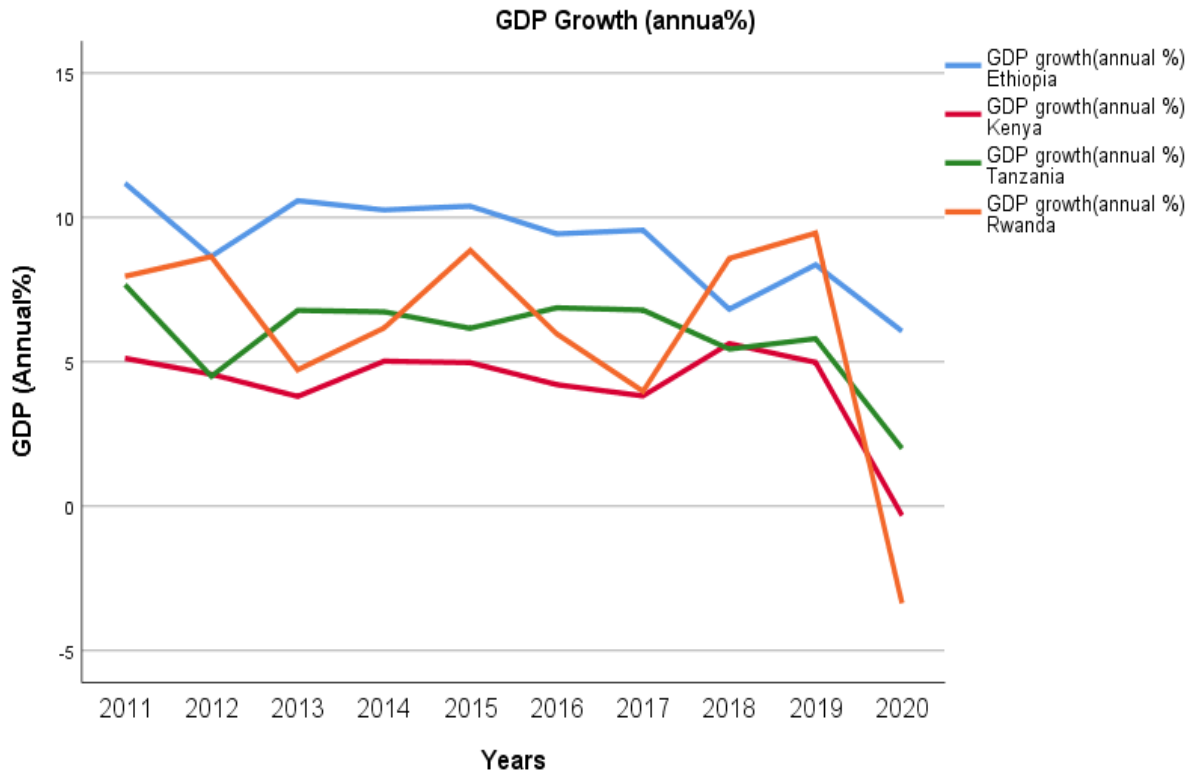

Figure 1 GDP annual % growth of Ethiopia, Kenya, Tanzania and Rwanda.

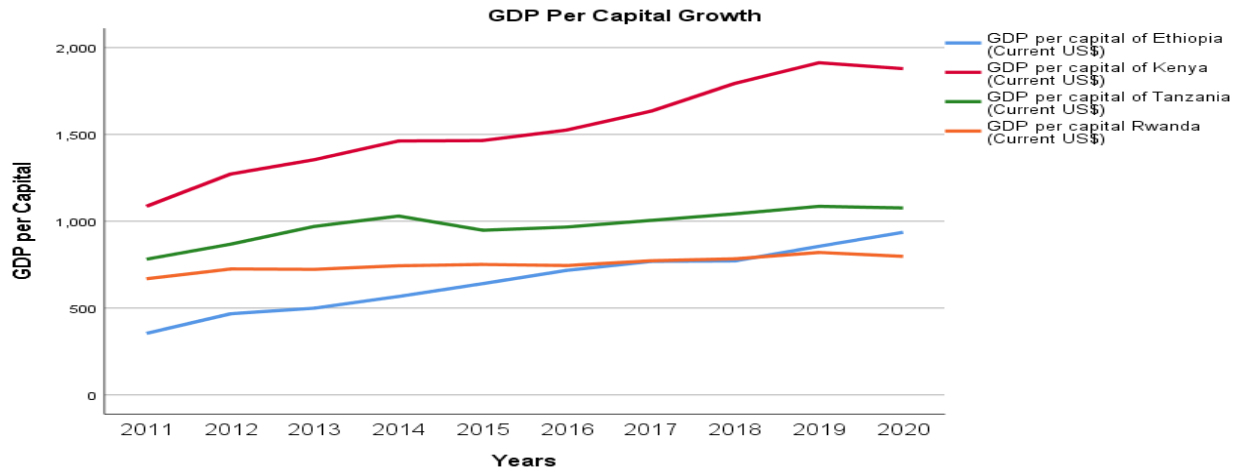

Figure 2: Graphic presentation of GDP per Capital of Ethiopia, Kenya, Tanzania and Rwanda.

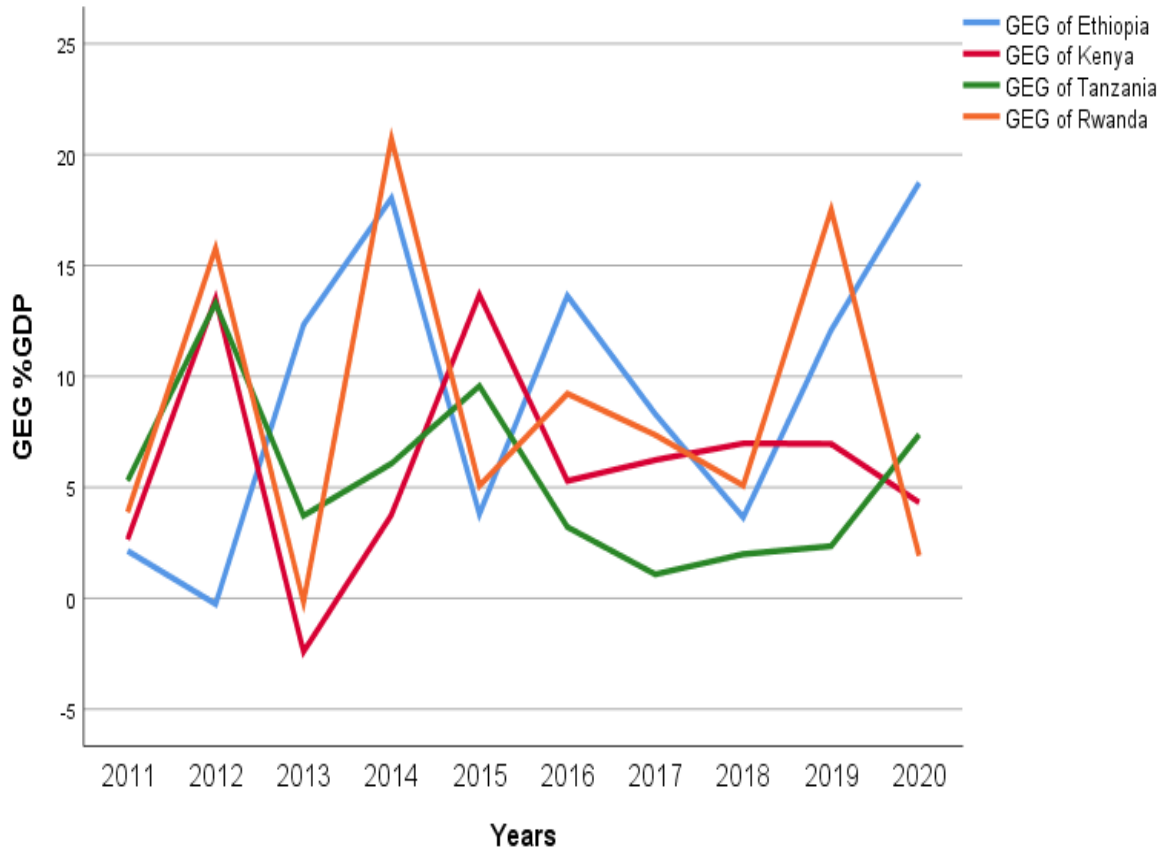

Figure 3: Government Expenditure Growth % Annual GDP Ethiopia, Kenya, Tanzania and Rwanda.

Figure 3 line graph shows the government expenditure growth rate as a percent of the annual GDP of the four nations over a period of 10 years. The government's expenditure growth rate experienced extremely fluctuating rate in all nations. The highest government expenditure growth rate was experienced by Rwanda's, 20.71 percent of GDP in 2014. Kenya, Rwanda, and Tanzania showed increases for the first two consecutive fiscal years 2011 and 2012, while Ethiopia's showed a decline and reached its lowest rate in 2012. In 2013, the three countries' declined sharply, and Rwanda and Kenya reached their lowest government expenditure growth rates of -2.41 % and -0.17 %, respectively, while Ethiopia's government expenditure growth began to rise substantially. All nations showed fluctuations in government expenditure and GDP percent growth between 2014 and 2020.

Table 4: Regression Analysis result

Regression statistics	**Ethiopia**	**Kenya**	**Tanzania**	**Rwanda**
R	0.197	0.230	0.410	0.411
R square	0.039	0.053	0.168	0.169
Adjusted R square	-0.081	-0.065	0.064	0.065
Standard error	1.73396	1.74183	1.57292	3.68679
Sig.	0.585	0.522	0.240	0.238
Total number of case	10	10	10	10

Source: **Software Package for Social Science result**

The regression analysis result reveals that there is a positive but insignificant relationship with a small and positive R square between government expenditure and economic growth in all the four nations. Based on this, we can draw the conclusion that government expenditure is not a good predictor of economic growth in the four countries.

6. Conclusion and Recommendation

From the results of the analysis, the four countries nations showed fluctuating positive economic growth until 2019. However, in 2020, four countries showed a radical decline; the reason for the decline is the global COVID 2019 pandemic. Ethiopia's GDP growth was high, with a double digit for four years over the period. GDP per capita increased in the four nations till 2019 and declined in 2020, except Ethiopia, which still has the least GDP per capita among the four nations. Kenya and Tanzania are classified as middle-lower income countries, while Rwanda and Ethiopia are still low-income countries. The results of the linear regression analysis showed that there is a positive but insignificant relationship between government expenditure and economic growth in the four respective countries.

Governments of developing nations should use scarce resources effectively and efficiently to improve the living standards of their citizens. Research in this area plays a vital role in improving government resource management. Further research with a broader scope and depth should be conducted to address the overall issues in the areas.

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