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WHAT DRIVES ECONOMIC GROWTH MUCH, PENSIONS OR MUTUAL FUNDS? ADDRESSING A FUNDAMENTAL QUESTION BETWEEN WALL STREET TRADING AND ECONOMIC GROWTH

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Abstract

Tensional arguments about pension funds and mutual funds towards economic development and stimulation seem to be inevitable among policymakers and economic agents with little paid attention as in literature. This study however took a comparative significance analysis of these two independent funds in relation to economic growth in the South African economy. We hypothesize that, mutual funds are more powerful than pension funds in fostering economic growth as evidenced by some scenarios where mutual funds are trusted to encounter pension funds risks. We then used multiple linear regression model accompanied by a t-test means difference test as a measure of significance difference between the two towards economic growth. As a primer approach, we used the Pearson correlation analysis and the results were noted. Pension funds are a powerful tool of fighting poverty in economies. However, our results were not in support. Our results tend to agree with our suspicion. From all the methods used, mutual funds proved to have greater impact on stimulating economic growth (GDP) in South Africa. Therefore, South African policymakers and officials should be all ways try to support the mutual fund industry as it have traceable marks on economic growth stimulation but pension funds

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should not be totally ignored as they play significant roles as well such as poverty fighting and ensuring survivability of the most stressing dependent group in the economy.

1. Introduction

Economic growth measurement and evaluation using economic development elements is surely an unfailing practise by almost every existing nation across the globe. Elements such as poverty rates, literacy rates and standards of living are the common factors used to evaluate economic development progress of any country. On the other hand, economic growth is a serious matter of concern which is receiving a better attention and in popular, Gross Domestic Product (GDP) is used to measure economic growth with time. Poverty is a serious matter that should be paid enough attention as it explains well the standards of living of any nation. Of interest, poverty rates tend to hit economies normally in clusters and these existing groups should be treated and catered for differently by economic advisors and policymakers. This makes it interesting to analyse economic growth for nations like South Africa. In common practise, economic growth is driven and fuelled by a number of factors such as foreign direct investment (FDI), high aggregate demand and supply, low interest rates, free international trade to mention a few.

Financial development including financial markets and economic growth is becoming a special area of focus in any economy. This when integrated with investment by individuals in assets and fund portfolios makes it a powerful and an inquisitive area of focus for both developing and developed countries. In particular, fund industries are very important economic sections which can leave remarkable traits to economies if well treated and well valued. This is because such funds help much in boosting economies through supporting private business prospects in risk management and output gaining, ensuring a constant investment return balance for members and the economy at large. Despite the little attention paid to the fund industry and economic growth nexuses, we aim to put on surface and to validate such a powerful subject.

Our core belief and mere understanding is that, the fund industries ignite economic growth. In this study, we shall only consider two unrelated fund systems: mutual funds and pension funds. Our study aims to see whether these funds propels economic growth in South Africa or not and if so by how much. More importantly, we aim to carry out a comparative analysis for the two funds against economic growth. Our central question is that, are mutual funds more capable enough to drive economic growth faster than pension funds and we aim to answer that question using a comparative analysis approach.

We hardly found exact related work to our subject but not absolutely. More related literature seems to exist in the field. Tan [13] contributed an empirical discussion on the mutual performance in general in South Africa. He aimed to evaluate the performance of South African equity funds between January 2009 to November 2014. Among his results, he found that The JSE has the highest standard deviation and the Huysamer Equity Fund, the Old Mutual Fund Investors Fund A and the Coronation Equity Fund follows the JSE, in that order. Also, Annon [1] from a research bulletin provided an insight on whether there is a link between equity returns and GDP. They considered an international data from 1969 to 2009. Also, they noted that supply-side models tie a country's stock returns to its GDP growth, but they do not suggest a perfect match between the two variables. On the other hand, Davis and Hu [3] examined whether there is a link between economic growth and pension funds schemes at cross-country level. They designed a modified Cobb-Douglas production function with pension assets as a shift factor, and investigate the direct link between pension assets and economic growth employing a dataset covering up to 38 countries, using a variety of appropriate econometric methods. They found positive results for both OECD countries and Emerging Market Economies (EMEs), with consistent evidence for a larger effect for EMEs than OECD countries. Additionally, Oladapo [11] provided evidence on the effect of the operation of the funded pension scheme since its inception in 2004 on

economic growth in Nigeria by using Error Correction Mechanism (ECM) and Ordinary Least Square (OLS) methodologies. His results suggested that the pension fund contributions from both private and public sectors in Nigeria increased greatly and constituted a huge investment fund in the capital and money markets. He then concluded that, with good risk and portfolio management by pension fund administrators and custodians, the contributory pension has the capacity to boost the Gross Domestic Product (GDP) in Nigeria and very convenient to retirees compared to the previous defined benefit scheme. Further, Yilmaz and Ozturk [14] investigated the growing value of the assets by pension funds on the economic growth in 26 OECD (Organisation for Economic Co-operation and Development) countries during the 2001-2015 period employing Dumitrescu and Hurlin [4] causality test. The findings revealed a bilateral causality between pension funds and economic growth. These results were all very much interesting in relation to our study. Other scholars such as Bijlsma et al. [2] and Farayibi [6] looked at the impact of pension funds on economic growth using 34 OECD countries and Nigeria, respectively. As a top up, Davis and Hu [3] researched the impact of pension funds on the economic growth in 38 countries from OECD and emerging markets using various techniques of panel data analysis and concluded that pension funds affected the economic growth positively. While Edogbaya [5] used correlation t-test analysis on the impact of pension funds on economic growth with the results stating that Contributory Pension Scheme (CPS) has significant impact on the GDP, Schmidt-Hebbel [12] reached the conclusion that pension reform in Chile boosted private investment, the average productivity of capital and TFP, which suggest an increased economic growth from pension funds. Other related work includes work by Hurlin and Venet [10] and Hu [8], Adeoti et al. [7] who proved to agree that, though not in South Africa, there exists a positive relationship between economic growth and pension funds.

Of course great significant related work was done but we could hardly find an exact match to our contribution which explicitly explains its novelty. Also, related work on mutual funds and economic growth appeared in small volumes and it is also going to be our contribution. Therefore, in this paper, we are going to explore the growth nexus between economic growth, pension funds and mutual funds in the South African state. We aim to use a comparison analysis in order to evaluate the two funds before coming to our conclusions. Our suspicion is that mutual funds can foster economic growth in South Africa at a faster rate than their pension funds counterparts. Our model shall be accompanied by a number of statistical tests using the collected data and relevant inferences shall be drawn before reaching out our conclusions and recommendations.

2. Overview of Mutual Funds and Pension Funds

We shall give out a brief explanation and explicit meaning of each fund before getting into our core study.

2.1. Mutual funds

In financial terms, a mutual fund is a typed one which offers small investors diversification opportunities; therefore, it is a pool of funds for small investors where benefits of diversification are realised at a relatively low cost (Hull [9]). They are more regulated than other funds such as hedge funds which make them unique and safe to opt for. They share the same regulation feature with the pension funds counterparts. Mutual funds are popularly known for their feature of improving the investor's risk-return tradeoff. Mutual funds normally appear in long-term funds such as bond funds that invest in fixed income securities with a life of more than a year, equity funds that invest in common and preferred stock and hybrid funds that invest in stocks, bonds and other securities. But, the most common mutual fund is the open-end fund. Open-end fund implies that the total number of outstanding shares goes up as investors buy more and down as more are redeemed. Interestingly,

mutual funds are valued each day at 4 pm. This is done through calculation of market values of each asset in the portfolio so as to find the total fund value. This fund value is of noble use in broad analytics such as ours. Normally, mutual funds do well but they do not beat the market. Mutual funds do advertise frequent impressive returns. From this idea we are convinced that mutual funds can propel economic growth. We hypothesize that, like micro-finances, mutual funds can empower small to medium investors and businesses and thus in turn increase aggregate demand and supply of an economy. We therefore below present a graphical illustration of the ratio data for mutual funds to GDP in South Africa to have a general outlook.

Figure 1. Mutual funds to GDP growth ratio in South Africa.

Source: Author's own compilation using data from World Bank.

The above trend is a complete show-off of mutual funds to GDP ratio in South Africa. The trend shows an ever increasing ratio of the two. This means that, as mutual funds adjusted alphas increase so it does to the GDP. This well defines the origins of our claim in this study. However, the establishment of our claim shall be met in the statistics proceedings below.

2.2. Pension funds

Pension funds are a pool of contributions either by both employee and employer or by employers only during the employee working life. From other words of practitioners, a pension fund is an investment product into which scheme members pay contributions in order to build up a lump sum to provide an income in retirement. Of interest, the contributions are made using either of the two distinct plans: defined benefit and defined contribution plans. Defined benefit plan is based on the philosophy that, on retirement the employee gets what is defined by his/her employer and for defined contribution, the employee gets the resulting investment output from the invested employee and employer contributions. However, the later is now the widely and commonly used plan. In this paper, we shall consider both types. These underlying pension funds are run by insurance companies and a small section of asset managers. Pension funds are development in target of the late aged people who normally leave work at retirement. They are designed to sustain the lives of retirees after their work life and other minor groups who may have exited their work through other modes. In most cases, the pooled funds are converted to a life annuity or are invested in a number of financial assets such as equities, government bonds, prescribed assets, non-vested assets among other valuable and profitable investments. The main topping reason behind developing all such investments is to curb the main tremendous challenges of insolvency and fund default. However, despite all this value of pension funds, we aim to see their value to economic growth in South Africa. We claim that, retirement funds do wipe-off poverty levels and it boost economic growth and development in terms of health, improved standards of living and improved life expectancy. We therefore provided a trending insight for the pension funds in the South African economy using the pension funds returns to GDP ratio as below.

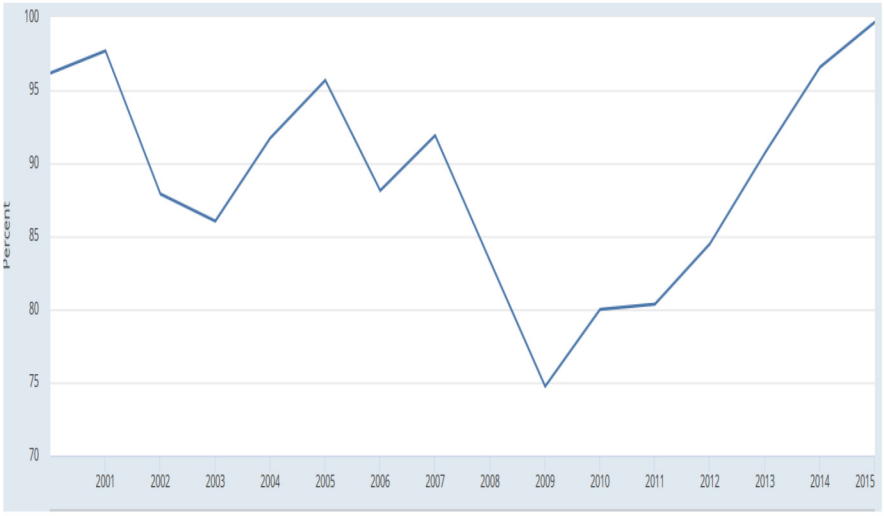

Figure 2. Pension funds to GDP growth ratio in South Africa.

Source: Author's own compilation using data from World Bank.

This trend is typically different from the one for the mutual funds. There were cyclical patterns on the ratio from 2000 to 2009. This means that, during the period there was fluctuations in the pension funds and consequently economic growth. However, from 2009 to 2016, the ratio sharply increased. This creates another claim that we interestingly want to examine as well. Everything is going to be answered as we go down the discussion.

3. Data and Methodology

Our aim is to verify whether mutual funds and pension funds do foster economic growth and if so, by how much. Our study aims to weigh the two fund systems against GDP. We aim to see and to verify that, which of the two funds foster economic growth at a faster rate than the other. Therefore, we shall use a statistical comparison based approach. The methodology therefore flows as follows.

3.1. Data

Our study period spanned from 2000 to 2018. We used World Bank data for pension fund asset returns, mutual fund asset returns and gross domestic product (GDP) as a measure of economic growth. The collected data in its sufficiency was used to make inferences towards our study questions and objectives. We were fortunate to have no missing values for the whole targeted sampling period.

3.2. Hypothesis

For the purpose of testing whether pension funds and mutual funds have effect on economic growth or not, we uniquely formulated our hypotheses as follows:

H_0: Mutual funds do equally foster economic growth as pension funds for South Africa.

H_1: Mutual funds foster economic growth more than pension funds for South Africa.

So, we shall perform a balanced one tailed test of hypothesis as stated above.

4. Results and Findings

The results for the sensitivity of economic growth to mutual funds and pension funds were presented and the derived model is as:

$$EG_{RATE} = \beta_0 + \beta_1 MUTFUND + \beta_2 PENSFUND + \varepsilon_i,$$

where

EG_{RATE} is the economic growth rate for South Africa;

β_0 is the intercept on dependent variable which takes a constant variable;

β_1 and β_2 are slopes of mutual funds and pension funds, respectively;

$MUTFUND$ is the short for mutual funds;

$PENSFUND$ is the short for pension funds; and

ε_i is the stochastic variable which captures other important but not included factor variables.

All our parameters are to be estimated by using Least squares estimation (LSE) method and the resulting model analysis are presented below. To test our claim we used means difference test based on the *p*-value approach. In addition, we shall perform the Pearson's correlation test based on the correlation coefficient hypothesis. We did use this only to ascertain if there is a link between our variables of interest before fitting our model. Lastly, other important test such as the normality Shapiro-wilk test were blindly done as one of the key pre-modelling requirements. The data used was normal which enhanced us to carry out well our statistics like the Pearson correlation and regression analysis.

Table1. Correlation summary table

	GDP	**Pension funds**	**Mutual funds**
GDP	1		
Pension funds	– 0.5717	1	
Mutual funds	0.1367	0.1003	1

The above table shows the relationship between gross domestic product (GDP), pension funds and mutual funds. Results suggested a positive correlation between GDP and Mutual Funds. A correlation coefficient of 0.1367 was obtained. This means that, as mutual fund asset returns increases, so it does to economic growth. This leaves an implication that, the South African government can safely support and boost its mutual fund section in the fund industry as they highly compliment an increasing economic growth. On the contrary, there was a negative correlation of – 0.5717 between pension funds and economic growth. This means that, an increase in pension asset returns forces the economic growth to decrease. This means that mutual funds have a greater capacity of pulling up the economic growth of South Africa if well welcomed and well treated. However, a negative correlation on pension funds and GDP is a complete signal to the government to make an extra effort to boost its pension fund section in order to increase its GDP records.

Table 2. Regression summary

Our regression analysis was done by using SPSS. We considered its use because it is good at tabulation of the results and it provides a quick and clear way of analysing results.

Source	SS	df	MS
Model	23.6830433	2	11.8415217
Residual	41.2334475	16	2.57709047
Total	64.9164908	18	3.60647171

Number of obs	=	19
F(2, 16)	=	4.59
Prob > F	=	0.0265
R–Squared	=	0.3648
Adj R–Squared	=	0.2854
Root MSE	=	1.6053

GDP	Coef.	Std. Err.	t	P > |t|	[95% Conf. Interval]	
Pension_fund_returns	– 1.125283	0.3810884	– 2.95	0.009	– 1.933154	– 0.3174119
Mutual_fund_returns	0.3590631	0.3668704	0.98	0.342	– 0.4186675	1.136794
_Cons	0.3351701	4.851456	0.07	0.946	– 9.949457	10.6198

From the table above, we performed a regression analysis to explore the cause and effect between GDP and the covariates; pension funds and mutual funds. As we aimed to explore the effect of mutual funds and pension funds on economic growth in South Africa, our regression analysis brought out some interesting results. We found a negative and positive relationship between GDP and pension funds and mutual funds, respectively. These results tended to move in the same direction with the correlation analysis results. The derived and fitted model is as;

$$\text{GDP} = 0.33517 + 0.35906\text{MUT}_{\text{funds}} - 1.12528\text{PEN}_{\text{funds}}.$$

The fitted model can be used for forecasting future economic growth in terms of gross domestic product (GDP). However, from the coefficient of determination obtained, all the funds failed to fully explain the variances in the GDP. This means that the changes in economic growth can be well explained and captured by other factors than mutual and pension funds, although they are of value.

Table 3. Hypothesis testing results

.test Pension_fund_returns = Mutual_fund_returns, unpaired

Two-sample t test with equal variances

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Pensio~s	19	2.094583	0.2289393	0.9979234	1.6136	2.575567
Mutual~s	19	13.22498	0.2378118	1.036598	12.72536	13.72461
Combined	38	7.659784	0.9292857	5.728502	5.776872	9.542695
diff		– 11.1304	0.3301025		– 11.79988	– 10.46092

diff = mean (Pension_fund_r~s) - mean(Mutual_fund_re~s) t = – 33.7180

Ho: diff = 0 degrees of freedom = 36

Ha: diff < 0	Ha: diff ! = 0	Ha: diff > 0
Pr(T < t) = 0.0000	Pr(|T| > |t|) = 0.0000	Pr(T > t) = 1.0000

To fully compare and to establish the actual strength of either mutual funds or pension funds on driving economic growth, we performed a means difference test. We conjectured that, the two funds perform differently as they operate in different ways. As such, their contribution to economic development also differs. In clearer terms, our claim was that, mutual funds perform and drive economic growth better than pension funds. Based on the stated hypothesis and the means difference test done, we rejected the null hypothesis. This is so because the p value (0.0000) was less than the level of significance (0.05), this means that,

there is statistical evidence that, mutual funds do foster economic growth more than pension funds. Thus, mutual funds proved to be stronger than pension funds when it comes to deriving economic growth in South Africa.

In addition, we shall test the causality claim using the Granger Wald test whose results are presented below.

Table 4. Granger causality test

.vargranger

Granger causality Wald tests

Equation	Excluded	chi 2	df	Prob > chi 2
Mutual_fund_ret~s	Pension_fund_re~s	1.1956	2	0.550
Mutual_fund_ret~s	GDP	0.3877	2	0.824
Mutual_fund_ret~s	ALL	3.3517	4	0.501
Pension_fund_re~s	Mutual_fund_ret~s	8.5403	2	0.014
Pension_fund_re~s	GDP	2.1872	2	0.335
Pension_fund_re~s	ALL	8.582	4	0.072
GDP	Mutual_fund_ret~s	0.44107	2	0.802
GDP	Pension_fund_re~s	7.2139	2	0.027
GDP	ALL	8.1729	4	0.085

The table above is following the causality test between mutual funds and pension funds and economic growth, where our aim is to explore whether or not mutual funds or pension funds drive/cause economic growth. We as well aim to identify which of the two drives economic growth much. From the results shown, it is clearly indicated that mutual funds cause economic growth much than pension funds. This is in line with the prior regression and statistical hypothesis tests done.

In this study, we are mainly concerned with the causalities between GDP and pension funds and mutual funds. From table of test done above, there is enough statistical evidence that, mutual fund does not cause GDP to rise. This is because the p value is greater than 5%. On contrary, pension funds do drive GDP since the p value is less than 0.05. However;

the joint impact of pension funds and mutual funds on economic growth seems to be controversial. There joint impact of the two funds is not strong enough to drive economic growth. This gives an insight to the policy makers and officials about the effort required to boost the funds industry in South Africa. But generally, the funds are important in the economy.

5. Discussions and Policy Recommendations

Based on the results obtained, mutual funds proved to be more significant in stimulating economic growth than pension funds. A positive and negative correlation between GDP, mutual funds and pension funds, respectively explained the differences in the strength of the funds in driving economic growth in South Africa. This means that if mutual funds perform well and earn high significant returns from the invested assets, further investments will be opened which bears more implications on macro-economic variables such as unemployment reductions. Such drifts do foster economic growth in the long run, provided the economy remains functional and stable. It should however, not disregarded that, pension funds plays also important roles in boosting economic growth. Such funds need only enough and substantial support from the laws, regulations and government policies. If well treated and governed, pension funds have the capacity of boosting the economic status of South Africa. Having conjectured that, the two funds perform differently, with the mutual funds being above pension funds, our results supported our claim and concluded that mutual funds perform and drive economic growth better than pension funds. This was based on South African data. On the other hand, from the granger causality test done, pension funds drive GDP while mutual funds does not. The joint impact of the two funds showed that, if well managed and promoted they can boost economic growth. The derived p value is 8% which is relatively close to 5%. We therefore, recommended that, South African government should take a solid

position to support the fund industry so as to ensure visible and significant returns. An improved fund performance bears more positive implications on economic growth and as such, they should be supported. This paper lastly suggested that, other wider studies can be further done on the same subject where a consideration of either cross-country, panel or cross sectional data is made.

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