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The impact of interest rates on savings and investments in South Africa

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Declaration

I, Nduduzo Ntando Xaba, declare that this research article is my own original work. This research report is submitted in partial fulfilment of the requirements for the degree of Masters of Business Administration (MBA) at the University of Witwatersrand. This report has not been submitted before, for another degree in any university.

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Abstract

The impact of interest rate on savings and investments has been of great interest to researchers as a result of its close association with supporting an environment conducive to creating a culture of savings and economic growth. South Africa has one of the worst savings culture in the world as savings rates in South Africa deteriorate and is one of the most indebted countries in the world. Policymakers in South Africa are exploring different methods to encourage savings and growing investments resulting which will lead into economic growth. However there still remains some ambiguity with regards to the variables that influence the savings and investment patterns. An increase in domestic savings can aid with the improving of the Gross Domestic Product (GDP) growth rate of the country, which has fallen short of its target over the recent years.

The SPSS software was used to run the simple linear regression as the statistical tool to analyse the correlation between interest rate, savings and investment. The study employed annual time series data over the 10 year period from 2007- 2017. Variables that were studied were interest rate, savings and investment. Our findings revealed that savings are positively impacted by interest rates and that investments are negatively impacted by interest rates.

INTRODUCTION

Interest rate can be described as the cost of borrowing money, or on the flip side, it can be defined as the compensation for the service and risk of lending money for the lenders (Oster, 2009). Interest rate is a key economic variable which affects economies at macroeconomic as well as microeconomic level. This can be incurred at a retail and interbank level, in the forms of deposit as well as loans. There is positive correlation between interest rate and capital efficiency for businesses (Bencik, 2009). Interest rates in an economy influence the decision for households and businesses‟ to consume in the current period or delay consumption for the future. For this reason, central banks can indirectly control inflation and the production in the economy through changing the interest rate (Bencik, 2009).

The research on household savings and investments has grown in interest and has obtained more focus from banks and policy makers in national government due to its correlation with economic growth, capital accumulation, ability for banks to lend more and therefore generate more revenue from borrowings derived from the funds saved and invested by their clients (both in individuals and firms).
South Africa households are highly indebted (Sithebe, 2014). For every ZAR100 in disposable income, South Africans are using ZAR 75 to service debt leaving, whilst only ZAR 25 are available for savings and investments. Therefore, changes in the interest rate (same as changes in the cost of investment or the reward for savings) impacts South Africans cost of living and financial viability (Feddersen, 2017).

The money market in any country's economy such as the South African's economy is the market for borrowing and lending financial instruments in the short term (with a maturity of a year or less). The money market includes the operations of the reserve bank and interbank market. The South African Reserve Bank steps in to establish a certain desired level of borrowed reserves or 'money market shortage' which it provides through the interbank market. The cost of reserves borrowed is provided at the South African Reserve Bank's accommodation rate referred to as the repurchase rate. The repurchase rate and the South African Reserve Banks actions are designed to influence or even control other short term market interest rates (Oster, 2009). The Treasury bill rate is also one of the money market interest rates, which is a short term interest rate issued by the South African government. The Treasury bill rate is the discount at which the South African government issued the bill. The Treasury bill serves as a benchmark indicator for the conditions in the money market and is used as a reference rate for calculations of other money market calculations (Oster, 2009).

Another short term interest rate is known as the prime overdraft rate. The prime overdraft rate is referred to as the lowest rate which a commercial clearing bank will be willing to lend its money on overdraft to clients. The prime overdraft rate sits at 3.5 percentage points above the repurchase rate (Oster, 2009). A change in the repurchase rate by the South African Reserve Bank directly influences the marginal cost of funding of commercial banks which leads to commercial banks in order to maintain profitability, adjusting the prime overdraft rates in line with the increase in the repurchase rate (Oster, 2009). Another crucial short term interest rate known as the marginal lending rate is linked to the repurchase rate.

The difference between capital and money markets is defined on the basis of term to maturity of the securities traded, and that term is known to be one year. The capital market can be defined as the market for trading and issuing of long term securities. There are four types of financial instruments that are traded in the capital markets: variable interest securities, negotiable, instruments shares and bonds (municipal bonds, debentures, corporate bonds and government bonds). The interest rates from these instruments represent the long term interest rates (Oster, 2009). Oster postulates that the expectation's of participants of future short term interest rates in the capital market determine the nominal interest rates. The participants in the capital markets make their decisions on the amount of real investment and savings they wish to obtain at real interest rates anticipated over the project's future life. The rate of growth of aggregate output and income is determined by the interaction of investment and savings decisions (Oster, 2009).

As a follow up to the above objectives, the following questions are asked: What is the impact of interest rate on savings in South Africa?, what is the impact of interest rate on Investment in South Africa? And do savings have an impact on Investment in South Africa? The main objective of this research includes the following: To ascertain the impact of the interest rate on saving in South Africa, to ascertain the impact of interest rate on the investment rate in South Africa, to ascertain the impact of savings on investment in South Africa.

Based on the research questions and objectives of the study stated above, the following hypotheses have been formulated:
Ho: There is no positive significant impact of interest rates on savings in South Africa;
Ho: There is no positive significant impact of interest rates on investment in South Africa and
Ho: There is no positive significant impact of savings on investment in South Africa.

The scope of the research is the effect the interest rate plays determining the growth in savings and investments in South Africa. This study explores the correlation between interest rates and savings and investments in South Africa in the period 2007 – 2017.

In 2014 the World Bank published a report stating that South Africans were the “biggest borrowers” in the world. The report indicated that South Africans are struggling to manage and service their debt. The debt in South Africa is constantly rising and the rate of use of credit in South Africa is outpacing the employment growth, this causes a ripple effect in the growth in over indebtedness in South Africa and slows down the growth of the South African economy. The South African Reserve Bank (SARB) is faced with a number of challenges in choosing the appropriate policies that will see the South African economy grow. Savings and Investment play a huge role in the growth of the South African economy and the interest rate is one of the determining factors affecting both savings and investment. The results of this study will be beneficial to the various stakeholders in the economy such as retail stores offering goods to customers on credit, national government, the South African Reserve Bank and commercial banks.

The South African Reserve Bank (SARB) makes use of the repo rate or repurchase rate to lends funds to commercial banks. The SARB acts as the banker for the commercial banks. When commercial banks require liquidity or have a shortfall of cash, they resort to the South African Reserve Bank as the last option. The process whereby commercial banks lend from the South African Bank is referred to as the repurchase transactions system (repo system). The repurchase transactions system of lending and borrowing involves the temporary sale of a financial asset by the commercial in exchange for the needed cash from the SARB. The repo rate is determined by the Monetary Policy Committee within the SARB (SARB, 2007). The repurchase rate serves as the point of reference for the level of short term interest rates. When the repurchase rate increases, the commercial banks incur a high cost for the purchase of repo funds. In order for commercial banks to maintain their existing profit margins, banks increase interest rates and pass on the extra charge to the general public. This leads to an increase in interest rates or the cost of holding money which assists in controlling inflation by reducing the demand for credit which South Africans spend it on goods and services. The above actions taken by the South Reserve Bank are known as the implementation of the monetary policy (SARB, 2007).

The South African Reserve Bank conducts within the inflation-targeting framework the monetary policy to protect the South African Rand. The South African Reserve Bank seeks to target the inflation rate at a specific target point or a range which is intended to be achieved over a specific future period of time. The South African Reserve Bank target inflation over a 12 month rate of increase in the consumer price index, excluding mortgage interest rates costs, called the CPIX of three – six percent (SARB, 2007).

Though setting the monetary policy, the South African Reserve Bank agrees at the Monetary Policy Committee meetings the level of short term interest rates necessary to meet the inflation target. The Monetary Policy Committee considers various economic factors which range from both domestic and international which could potentially impact the future path of inflation. In agreeing to the change in the interest rates, the Monetary Policy Committee focuses on a time horizon of two years, as this is the time it takes for the changes in the interest rate to have a full impact on the economy. The Monetary Policy Committee of the South African Reserve Bank impact the lending policies adopted by the commercial banks, which therefore influences the credit and demand for money in the South African economy. If the South African Reserve Bank Monetary Policy Committee evaluates that within the next two years the inflation rate will rise above the inflation target range, the South African Reserve Bank Monetary Policy Committee will tend to increase the repurchase rate and vice versa, if the Monetary Policy Committee evaluates that within the next two years the inflation rate will fall below the inflation target range, the Committee will tend to decrease the repurchase rate (SARB, 2007).

According to the SARB (2007), factors in South Africa which could lower interest rates include: Tightening or maintenance of discipline in finances within the public sector; a slower growth in the money supply and in the bank credit extension; a stronger national savings effort; an improvement in the level of foreign reserves and improvement in the current account of the balance of payments; increase strength in the South African rand relative to other currencies; decrease in the inflation rate; the level of inflation rate and interest rates in other parts of the world (SARB, 2007).

Domestic interest rates in South Africa are influenced by events that take place in other economies. An increase in interest rates in another country, leads to that country becoming relatively more attractive to international investors relative to other countries, with the assumption that the risks associated with investors investing in that country remain the same. Due to the reasons stated above, the South African economy has become more sensitive to the changes in both developed and developing financial markets (SARB, 2007).

LITERATURE REVIEW

The theory of reviewed in this section is divided into five categories: Keynesian theory; the classical theory of interest; Neo Keynesian modern theory of interest rate; Conclusion on the loans funds theory, neoclassical monetary theory and liquidity preference theory and Post Keynesian interest rate theory. Firstly the two types of interest rates theories are defined. Secondly, The Keynesian theory argues that interest rate does not have a significant influence on the growth of savings in households and firms as retained profits and investment and identifies three liquidity preference motives for holding cash. Thirdly the Classical theory of interest rates argues that the interest rate is an equilibrium factor between the willingness to save and the demand for investment. Fourthly, the Neo Keynesian Modern theory of interest rate argues that both the Keynesians and the classical theory (loans funds theory) have various pitfalls and are indeterminate. Lastly, the Post Keynesian opposes the neoclassical economics in monetarism, general, new classical thinking and rational expectations.

There are two types of interest rate theories: Monetary and Real. Monetary theories examine the interest rate as the selling securities and the cost of borrowing, and the return on purchasing securities and lending money. Real theories of interest rate are the yield on real capital and the return for real abstinence (Oster, 2009).

This research paper will examine four theories of interest rates; the liquidity performance theory also known as the Keynesian theory, the loanable funds theory also known as the classical theory of interest rate, the Modern theory of interest rate and the Post Keynesians interest rate theory.

Keynesian Theory

The Keynesian theory of interest rate also known as the liquidity preference theory, Keynes argued that interest rate does not have a significant influence on the growth of savings in households and firms as retained profits and investment (Keynes, 1936). Keynes defines the interest rate as the rate “governing the terms on which funds are being supplied”. Keynes argued that the market interest rate depends on the demand and supply of money (Keynes, 1936). Keynes postulates

market interest rate as the price which balances the inclination to keep wealth in the form of cash with the supply of cash. Keynes argues that the interest rate is the incentive “for not hoarding” or for separating with liquidity for a specified period of time. Keynes argues that the market rate of interest is a “measure of unwillingness of those who possess money to part with their liquid control over it”. Keynes argues against the point that the interest rate is the price that makes the demand for savings equal the supply of savings. Keynes also argues against the view that the interest rate is assumed as compensation for savings. Keynes postulates the view that the form in which the command over future consumption is reserved i.e. the fact that an individual is willing to hold his/her wealth in the form of cash. Keynes defines this “factor” as liquidity preference (Katarzyna, 2016).

Liquidity preference can be defined as the function of the fixed quantity of money at a given interest rate. The liquidity preference theory is formulated as follows:

M = L: Where M identifies the quantity of money, L equals the function of liquidity preference and r the interest rate. Keynes identifies three liquidity preference motives for holding cash: Transaction motive, Precautionary motive and Speculative motive. The author suggests that the demand of money as the sum of transaction, precautionary and speculative motives. $M = M_1 + M_2$.

In the equation, M_1 stands for cash kept for transaction and precautionary motives, whilst M_2 equals the cash kept for speculative motives and M the demand for money. Keynes argues that the transaction and precautionary motives are influenced by the changes in income whilst speculative motives are influenced by the changes to the interest rate (Katarzyna, 2016). Therefore, the aggregate demand for funds to satisfy the speculative motive usually shows an ongoing response to gradual changes in interest rate; there is an ongoing curve relating changes in demand for funds to satisfy the speculative motive and changes in the interest rate as given by changes in the interest rate as given by changes in the prices of bonds and debt of various maturities (Keynes, 1936).

Keynes ascribes the two categories M1 and M2 with two liquidity functions: L1 and L2. L_1 is the function of the level of income Y and L_2 is dependent on the relationship between current interest rate and market forces (Keynes, 1936).The demand for money can be demonstrated as a function of the choice of Liquidity L_1 and L_2 formulates the Liquidity preference as follows: $M= M_1 + M_2 = L_1 + L_2$

The classical theory of interest rate

The classical theory of interest rates argues that the interest rate is an equilibrium factor between the willingness to save and the demand for investment. Investment is described as the demand for investible funds and savings is described as the supply for investible funds, whilst the interest rate is regarded as the price for investible funds equating the demand and the supply. The classical theory postulates that the equilibrium interest rate is determined by market forces at the point where the amount of investment and amount of savings is at the same rate of interest (Keynes, 1936). This argument is supported by Marshall's Principle on interest rate which states "Interest, is the price paid for the use of capital in any market, tends towards an equilibrium level such that the aggregate demand for capital in that market, at that rate of interest, is equal to the aggregate stock forthcoming at that rate" (Marshall, 1890).

The Nature of Necessity of Interest by Professor Cassel's postulates that savings can be described as the "supply of waiting" and investment as the "demand for waiting" and the interest rate is the "equilibrium price" for both (Carver, 1901).
Professor Taussig states that the interest rate is at equilibrium at the point where marginal productivity of capital is adequate to raise the marginal instalment of saving.

Neo Keynesian Modern theory of interest rate

The modern theory of interest rate is also known as the Neo- Keynesian synthesis argued by Hicks and Hansen. Hicks and Hansen argues that both the Keynesians and the classical theory (loans funds theory) have various pitfalls and are indeterminate.

Hick and Hansen argues that the Keynesian theory on interest rate takes into consideration only the monetary factors and the classical theory take into consideration only the real factors that influence the interest rate (Hansen, 2018).In the modern theory of interest rate, Hicks and Hansen consider both the monetary and real factors. Hicks and Hansen postulate that the classical theory or the loans funds theory and the Keynesian liquidity preference theory integrated do provide a sufficient theory of interest rate. The neo-Keynesian synthesis theory supplies a determinate theory of interest rate through integrating the four factors: Savings, liquidity preference, the quantity of money and investment (Priyadarshini, 2012). The neo-Keynesian synthesis integrates both monetary and real factors in determining the interest rate.

Professor Hansen argues in his article titled Monetary Theory and Fiscal Policy that there are four factors determining the rate of interest: The consumption function; the investment demand schedule; the quantity of money and the liquidity preference schedule (Priyadarshini, 2012). The neo-Keynesian synthesis identifies four determinants of income and interest rate: thrift; productivity; the desire for holding cash; the quantity of money (Priyadarshini, 2012). Professor Hicks and Hansen argue that the equilibrium condition of these factors combined determine the rate of interest. According to Professor Hansen, “an equilibrium condition is reached obtained when the desired volume of cash balances equal the quantity of money. When the rate of interest is equal to the marginal efficiency of capital and when the volume of savings is equal to the volume of investment and these factors are interrelated” (Priyadarshini, 2012).

In summary, according to the Hicks and Hansen when the four determinants of interest rate stated above combine with income provides an adequate explanation on the interest rate. The neo-Keynesian synthesis formulated the following two schedules: IS schedule: Indicating the equilibrium between the flow variables in the real sector and LM schedule: Depicting the equilibrium of the stock variables.

The point of intersection between the IS curve and the LM curve depicts the equilibrium rate of interest. At the equilibrium rate of interest: total investment = total savings; demand for money = supply for money; the real and monetary sectors are at equilibrium. The loanable funds theory determines the interest rate in the long run. According to the loanable funds theory, the interest rates adjusts to achieve equilibrium, due to highly restrictive assumptions regarding its

formulation, the theory fails to be an adequate theory of interest rate determination. The natural rate of interest can't be defined outside of a one commodity model and is defined in a moneyless world (Oster, 2009).

Money is viewed in the same breath as any other commodity in the world in the neoclassical monetary theory. Based on scarcity, money is compatible in the neoclassical view as everything is worthy is scarce including money. The rate of interest which is the price of money is determined by demand and supply mechanism in the market which also applies to the prices of goods and services in the general equilibrium neoclassical system (Oster, 2009). An alternative approach to the loanable funds theory is the liquidity preference theory of interest rate determination. The liquidity preference theory of interest is based on the short run supply and demand of money. The liquidity preference theory of interest also has shortcomings. One of the assumptions took away the important implications of uncertainty and interdependence between variable in the money and goods market (Oster, 2009).

Post Keynesian interest rate theory

Post Keynesian opposes the neoclassical economics in monetarism, general, new classical thinking and rational expectations. Post Keynesian views are in alignment with the views forwarded by Keynes in the general theory with regards to central conceptions and insights but are in disagreement with Keynes views on with regards to erogeneity of the supply of money (Oster, 2009). Nicholas Kaldor, Richard Kahn and Joan Robinson make up some of the group members of economists that associated with Post Keynesians economics. The Post Keynesians view reconciles the behaviour of central banks with monetary theory with three interdependent properties, namely: the non-neutrality of money; the non-existence of a theory of interest rate; the endogeneity of credit and money (Oster, 2009).

The Monetary theory of post Keynesian is clearly articulated by comparing it to the orthodox neoclassical theory. In the neoclassical theory, money is seen as a given endowment and thus deems it as an exogenous variable. Money conducts itself

just like any other commodity and is in line with the neoclassical view based on scarcity which states that everything that worthy is scarce. The interest rate which is the price of money is determined by the market demand and supply mechanism. Oster states that Post Keynesians theory regard money as endogenous and the interest rate as exogenous variable which is the total opposite view of the neoclassical approach. The Post Keynesians theorists postulates that the principles of their theory state that the interest rate cannot be defined in the neoclassical general equilibrium models. The interest rate must be treated as an exogenous variable as it can't be explained in terms of neoclassical analytical principles (Oster, 2009).

The non-neutrality of money

Post Keynesian economists believe that monetary variables have significant real effects in the short and long term and their view falls into Schumpeter's monetary analysis classification (Oster, 2009).The Post Keynesian makes two compelling arguments against the neutrality of money which is based on two attributes of neoclassical monetary theory: Say's law and the quantity theory of money. Say's law states that supply creates its own demand. Say's law is underpinned by the principle that production is, through generating income, simultaneously generates the means to purchase the output. Say's law drives the notion that people's willingness to work is motivated from the desire to consume therefore there shouldn't be a limitation to the sale of any volume of output (Oster, 2009).

In the long run, the unemployment should not exist because output should grow to the point where in the long run the labour force in a country is full employed, therefore say's law regards unemployment as a temporary phenomenon (Oster, 2009). The quantity theory of money was complemented by Say's law, by providing the price level. With money velocity stable and changing slowly over time as financial institutions evolve and with full employment ensured in the long run, the quantity of money is seen to determine the price level, as shown in the equation of quantity of money below: MV = PY, represents money stock and is regarded as a exogenous variable and the way of causality is seen from money stock to price with the assumption of a constant velocity of money (Oster, 2009). The combination of the Say's law and the quantity theory of money result in the

conclusion that money is neutral, with no impact on output, an increase in the money stock will cause an increase in the price level in the long run.

The endogeneity of credit and money

It is crucial to macroeconomic theory and policy the issue of endogeneity of high powered monetary base. The general view supports that the central bank is able to influence the value of high powered monetary base and therefore the money stock, by selling and buying securities in the open market (i.e. the money supply is exogenous) (Oster, 2009). The exogenous money supply function is incorporated in the IS-LM model, with a shift in the LM curve representing the monetary policy. The concept of an exogenous supply is reinforced by the monetarist approach and stated that the rate of change in the money supply determines the inflation rate. In the general neoclassical monetary theory the availability of free reserves determines the supply of new loans. The central bank which sets the stock of high powered of high powered money, determines the quantity of outstanding loans through the standard money deposit multiplier and stock of money. The relationship is shown below: M = h (m) x H where: h (m) = multiplier
M = money supply; H = monetary base (i.e. the stock of high powered money) (Oster, 2009).
Oster (2009) states that if authorities of the monetary system want to influence the money supply then the monetarists put forward that they control the monetary base (H). Given that the multiplier, h (m), is predictable and stable, the control of the monetary base then makes certain over the money supply. The monetarists assume that the direction of causation is assumed to run from the monetary base to the money supply, therefore the monetarists view the money supply under the control of the central bank as exogenous.

Meghana criticises the modern theory of interest rate for the following reasons: Inflexibility of the interest rate: The modern theory of rate of interest is based on the assumption that the interest rate is flexible and fluctuates with changes to the IS and LM curves. Adjustment mechanisms which cause the interest rate to be rigid and not flexible defy this assumption; Investment not Interest elasticity: The modern theory of interest rate assumes that investment is interest elastic; Meghana argues that generally investment is inelastic to interest rate,

which therefore means the modern theory on interest rate does not hold true; Price is an external factor: The modern theory of interest rate regards the price level as an external variable. Meghana argues that treating the price level as a external variable is no viable because the variation in the price level plays a crucial in the determination of interest rates and income in the economy (Meghana, 2017).

Patinkin (1956) criticises the modern theory of interest rate based on the theory being highly artificial: The modern theory of interest rate is highly synthetic and articulated in a simply manner because it differentiates the economy into monetary and real sectors and Patinkin argues that in real life, the sectors are interdependent and interrelated and influence each other (Patinkin, 1956).

Professor Rowan criticised the modern theory of interest rate and argued that it is expounded as a closed model and does not consider international trade and the effects thereof (Meghana, 2017). The inconsideration of the effects on international trade limits the practicality of the study.
Despite the shortcomings of the theory stated above, the theory does not impede the use of the utilization of the IS- LM model approach in determining the interest rate in an economy.

There are a number of factors influencing the change in the South African interest rate:

The rate of interest is determined by the demand and supply of funds. The supply of funds is determined by the inclination of society for current consumption vs. future consumption. Communities that are prepared to delay current consumption for the future will have a higher supply of funds in an economy and vice versa societies that are not inclined to delay current consumption for the future will have a lower supply of funds in an economy. The opportunities available for using borrowed funds profitably and efficiently determines the demand for funds. The greater the profit margins for the use of borrowed funds the greater the demand for funds (SARB, 2007). If the supply of funds decreases or the demand for funds increases i.e. the interest rate will increase. If the supply of funds increases or the demand for funds decreases i.e. the interest rate will decrease. The uncertainty

about the future demand and supply of funds also plays a crucial role the determination of the interest rate (SARB, 2007).

The inflation rate can be described as the increase in the overall price level of goods and services in an economy. The higher the inflation rate in an economy, the higher the probability of a rise in interest rate. The increase in inflation rate causes lenders to demand higher interest rates as compensation for the decline in purchasing power for the funds the lenders will be repaid in the future (Sunday, 2012). The South African Reserve Bank also states that excessive inflation, when the inflation rate goes outside of its target range of 3 – 6% in South Africa also contributes to high interest rates as interest rates have to be at least higher than expected and current inflation to encourage South Africans to save more (SARB, 2007). South Africa's inflation is well above that of its main trading partners which are often more developed with more diversified sources of tax revenues and savings, this leads to South African's interest rates being more higher than that of their main trading partners. Interest rate levels in South Africa are however not extremely high relative to other emerging economies (SARB, 2007).

The central bank in a country can influence the interest rate in an economy through affecting the money supply in conducting open market operations. The central bank in a country can buy and sell government securities in an open market. The central bank of a country can buy government bonds which will result in the increase in the supply of money in an economy and lead to a decrease in the interest rate and vice versa the central bank in an country can sell government bonds which will result in a decrease in the supply of money in an economy and lead to an increase in the interest rate (Oster, 2009).

Another factor is currency; the depreciation in the local currency of a country can lead to the central bank of a country to increase interest rates causing the local currency to appreciate in value in respect to foreign currencies in an attempt by the central bank to defend the local currency.

The increase in interest rate by the central bank attracts foreign investments and causes an increase in the local currency resulting in an increase in the value of the currency (Mahvish, 2017).

There is a misinterpretation between the concepts of savings and investments. Savings is the net result when people refrain from consumption and consume less than their income or in other words savings is the remaining portion of income which was not allocated for the purchasing of consumer goods and services. Investment can be defined when businesses or government purchases assets and new capital like equipment, machines, other building investment and factories for the creation of wealth and future productivity (Upton, 2000).

Another factor is the financial markets expectation; both the local and international financial markets affect the structure of the rate of interest rate to fluctuate. An increase in the inflation rate leads to an increase in the increase in the interest rate and vice versa if market expects the inflation rate to decrease and that the central bank is likely to easy the monetary control, speculations will cause interest rates to fall (Sunday, 2012).

There are two main factors that determine savings. The first main factor is interest rate. Savings is as a result of the choice made by households to consume in the present or delay consumption for the future. Individuals assess their rate of time preference against the interest and align their consumption over a period of time to maximise their benefit. The interest rate would be the main determining factor influencing the savings rate (Bank-of-Hapoalim, 1998).

The second main factor influencing savings is income, as the change in the level of income influences savings. The Bank of Hapoalim argued that there is a close correlation between consumption and income and the difference between them is results in savings (Bank-of-Hapoalim, 1998).

Other factors influencing savings and investment:

The Bank of Hapoalim (1998) postulates that there is a positive correlation between the income level per GDP capita and savings. A higher proportion of income for lower income earners is spent on consumption to satisfy basic needs. It is higher income earners that have the income to be able to purchase luxury goods.

The Bank of Hapoalim (1998) postulates that a lowers proportion of income for high income earners is spent on consumption and part of their income is set aside for saving purposes.

Another factor is the fiscal policy, according to the Ricardian equivalence theory

postulates that a decline in public savings will be counteracted by an increase in private savings. A growth in public debt which is implied that there is a decline in public savings, will cause households and individuals to adjust their spending habits and increase their savings, in preparation of the future tax burden that will mostly likely be imposed by government.

Another factor is the proportion of labour remuneration in national income, the Bank of Hapoalim (1998) postulates that there is a negative correlation between the proportion of labour remuneration and savings, this is caused from the fact that the marginal tendency to consume from earned salary income is greater than the marginal tendency to consume from non earned salary income.

The impact of interest rate on savings and investment: Arguments for and against McKinnon and Shaw's model.

The positive correlation between aggregate savings interest rates is articulated in research done by Shaw and McKinnon in 1973. Shaw and McKinnon (1973) identified that interest rates have a positive impact on economic growth and savings thus the link between interest rate responsiveness and savings, as postulated by the McKinnon-Shaw is positive (Shaw, 1973).

McKinnon and Shaw (1973) suggested that when government lessens restrictions and regulations, which will lead to an increase in real interest rates will result in an increase in savings and investment and ultimately lead to economic growth (Mckinnon, 1973). Fry (1998) postulates that interest rates distorts the savings and investment variable in the following way: Firstly, in an economy where interest rates are kept low, this leads to an increase in current consumption and decrease in future consumption which results in a decrease in current savings and increase in future savings. Secondly, in an economy where interest rates are kept low, this leads to an increase current investment (Fry, 1998).

Warman (1994) postulates that increase in interest rates encourage more savings and investment which spurs economic growth. There is a positive relation between the supply of credit from the banking system and investment but there is negative relation between interest rates and investments (Warman, 1994).

Warman (1994) states that there is a positive relationship between real interest rates and savings. Balassa (1989) reviewed the estimates of the interest elasticity of savings and through his research concluded that interest rates are inversely related to consumption and directly related to savings. Balassa's research indicated that savings reacted positively to interest rates in countries such as Portugal and Turkey (Balassa, 1989).

Chauke (2011) postulates a different view to that of McKinnon and Shaw's Model. Chauke (2011) states that interest rates have a negative correlation with savings and argues that lower interest rates in South Africa allows South Africans to have more disposable income as a smaller portion of their income is used to repay their debt which allows South Africans the ability to save more, thus an increase in interest rates leads to a lower savings rate (Chauke, 2011). Manyama (2007) argues a similar view to that of McKinnon and Shaw's Model and states that an environment of low interest rates incentives or leads to an increase in consumer spending and has a negative impact on the savings behaviour as lower rates leads to lower returns. Lower interest rates lowers the cost of credit and makes credit more affordable, which increases the demand consumers have for credit thus leading to consumers spending more rather than saving more, thus an increase in interest rates leads to a higher savings rate (Manyama, 2007).

Kibert (2009) argues that there has been many theories and results from past research on the impact of interest rates on savings and investment which had different conclusions. Kibert (2009) states that very few of the researches took into account credit as a factor influencing savings. Kibert (2009) argues that the expectations that from financial institutions that an increase in interest rates leads to an increase in savings and investments have fallen short, as this was not the case with developing countries. Kibert (2009) argues that amongst the continents in the world, Africa's savings rate has been the lowest despite higher interest rates. The low savings rate in developing countries could be due to the fact that Africa has serious credit constraints; and this together with low income could be a huge hindrance to incentivising people to save. Based on studies conducted by Kibert, he states that the interest returns on savings does not motivate people in the rural areas to save more (Kibert, 2009).

Mlangeni (2011) states that the impact of higher interest rates on savings is

unclear, as the wealth and substitution effect work against each other and in opposite directions. Whilst an increase in interest rates results in an increase in return to savings, they also allow households to meet their obligations with a lower volume of savings (Mlangeni, 2011).

Muradoglu (1996) states that according to the intertemporal consumption decision, an increase in interest rates increases savings. Muradoglu states that, for developing economies, the effect of real interest rates on savings is positive (Muradoglu, 1996). The impact of interest rates on savings can also be described by the inflation effect: With the assumption that nominal interest rates will remain constant, an increase in the rate of inflation reduces the real cost of borrowing and hence has a positive impact on consumer expenditure and a negative effect on savings (Muradoglu, 1996). Chipote (2014) states that there is a lack of consensus on the impact that interest rates have on savings because of the contradicting substitution and income effects. The substitution effect states that an increase in the rate of interest will lead to an increase in savings as households' forgo current consumption for more future returns. The income effect states that an increase in the rate of interest rate will result in a decrease in savings as households expect an increase in future incomes (Chipote, 2014).

Simlet (2011) argues that there is a negative impact that interest rate has on households savings, due to the income effect being greater than the substitution effect (Simlet, 2011). Loayza (2000) states that the impact of the rate of interest can be explained in two opposing effects: substitution and income effect. The income effect can be explained by the following: increase in interest rates leads to a decrease in the present value of future income flows which results in a negative influence on savings. The substitution effect can be explained by the following: an increase in interest rates which increases the net returns on savings and incentives consumers to save more as savings becomes more attractive (Loayza, 2000).

Dirschmind and Glatzer (2004) postulate that households forgo their present consumption in order to consume more in the future which leads to an increase in savings when interest rates increase which is known as the substitution effect. When interest rates increase households also anticipate a higher income which

leads to households increasing present consumption and results in a decrease in current savings (Dirschmind & Glatzer, 2004). But Dirschmind and Glatzer (2004) state that it is unclear which effect is stronger.

McAleese (2004) state that interest rates affect savings and consumer spending in the following ways: Substitution effect: A decrease in the interest rates reduces the return on savings and makes savings less attractive and incentives households to increase their current consumption; cash flow (income effect): a decrease in interest rates results in a reduction in the cost of borrowing which leads to more cash flow for borrowers and less for lenders; and wealth effects: an increase in interest rates increases the value of equity, bonds and housing, which an increase in the value of assets leads to an increase in consumer spending (McAleese, 2004).

Mikesell and Zinser (1973) states that there are a number of econometric and theoretical problems involved in the relationship between aggregate savings and interest rates, including the substitution and income effect on interest rate changes and argues that interest rates have a stronger influence in determining the channels into which savings will flow and less influence in changing the saving propensities (Mikesell & Zinser, 1973).

Greene and Villanueva (1990) states that there are two opposing views on the effect of interest rate on investments. There is a negative relationship between interest rates and investments as an increase in interest rates results in an increase in the cost capital which discourages and reduces investment levels (Greene & Villanueva, 1990). Greene and Villanueva (1990) argues that there is also a positive relationship between interest rates and investment. In less developed countries where financial markets are less developed and there is poor access to foreign financing for domestic private projects which implies that domestic savings is a big constraint to investments. In theory, both investments and savings respond positively to an increase in interest rates (Greene & Villanueva, 1990).

Conclusion

It is clear from the above that there are various factors influencing the change in the South African interest rate. The determinants that influence interest rates have been identified which includes namely inflation rate, currency, demand and supply for funds and financial market expectations. The determinants that influence savings includes the level of income, the level of per GDP capita and fiscal policy. The question that still needs to be addressed are: Does interest rate and savings have a positive correlation; does interest rate and investments have a positive correlation; does savings and investment have a positive correlation.

The two factors savings and investment will be analysed to determine the impact interest rate has on both savings and investment and recommendations will be made based on the results identified during the process.

RESEARCH METHODOLOGY

The Literature review has shown that there are several factors which influence the interest rates, savings and investments. The purpose of this study is to gain an understanding on the correlation with savings, investment and interest rate and how policy makers in South Africa can use this information to achieve economic growth and grow the culture of saving. It will conclude with recommendations. The literature review provided the platform upon which the relationship between interest rate, investments and savings can be investigated. These factors were tested using research hypotheses as formulated in this chapter.

According to Lee (2007), a research design involves establishing how a chosen method will be applied to answer research questions. The design of a study can be thought of as a blueprint elaborating on what will be done and how will it be achieved.

The research design utilized in this research is the ex post facto research design. This is because the researcher will investigate possible cause and effect relationship between the independent variable that has already occurred and the dependant variable. The researcher does not aim to control any of the variables under examination. The investigation is to observe occurrence over a period of time (2007 – 2017). The researcher will be using secondary data to test the hypothesis formulated. Secondary data is already existing data and cannot be manipulated (Sunday, 2012).

The source of the secondary data adopted through the reports is the Absa Bank savings and investment reports. Data will be collected directly from the original source, extracted from the accounts of Absa Bank savings and investment. The sampling technique adopted for this research is the non-probability sampling method. The main non probability sampling method utilized is the convenience sampling method which is based on the ease of accessibility of data to the researcher (Cohen, 2006). The timeframe chosen was selected with the intention to obtain a range in the interest rate cycle where it both a tough and a peak could be found on the interest rate value, which will assist in indicating the influence of the interest rate on savings and Investment.

The Simple Linear Regression Model will be used in testing the hypotheses.

The following symbols were used to represent their respective variables:

Sav = Savings rate

Int = Interest rate

Inv = Investment rate

b = Constant of the equation

c = Coefficient of the independent variable

z = Error terms

Hypothesis one states that there is no positive significant impact of interest rate on savings in South Africa. The H1 is therefore represented by the following equation:

Sav = b + Int (c) + z..... (1)

Hypothesis two states that there is no positive significant impact of interest rate on investment in South Africa, and is represented by the following equation:

Inv = b + Int (c) + z..... (2)

Hypothesis three states that there is no positive significant impact of savings on investment in South Africa, indicated by the following equation:

Inv = b +Sav (c) + z..... (3)

The Statistical Package for social science (SSPS) is the statistical tools of Simple Linear regression model will be used to analyze the data collected. The SSPS statistical software package will be used for predicting where independent variable against the dependent variable. This was required by our use of secondary data collected from Absa Bank savings and investment reports and Ycharts reports for the period 2007 – 2017. Given the form of the simple linear regression model in section the model specification section above, the below formulas will be used to determine the Y-intercept and the slope of the regression line. This will help us determine the impact of interest rate on the investment and savings in South Africa.

Thus

$$b = \frac{n(\sum XY) - (\sum X)(\sum Y)}{n((\sum X^2) - (\sum X^2)}$$

$$a = \frac{n\sum Y}{n} - \frac{b\sum X}{n}$$

The research had the following limitations: Only the South African savings and investment rates were analysed therefore the results may not be applicable to other economies and the research did not consider the impact of other factors which may influence savings and investment.

Empirical Test Results

This chapter looks at presenting the data obtained from secondary sources (Absa Bank savings and investment reports). As indicated in the Research Methodology chapter, the SPSS software was used to run the simple linear regression as the statistical tool. The presentation of the results will be in line with the research methodologies followed on this study. This chapter looks at the trend on interest rate, the trend of interest rate and savings and the trend of savings and investment for the review period of 2007 – 2017 and the test of the three hypothesises.

Table 4.1 South African Deposit Interest rate, aggregate savings deposits and investment funds (2007- 2017).

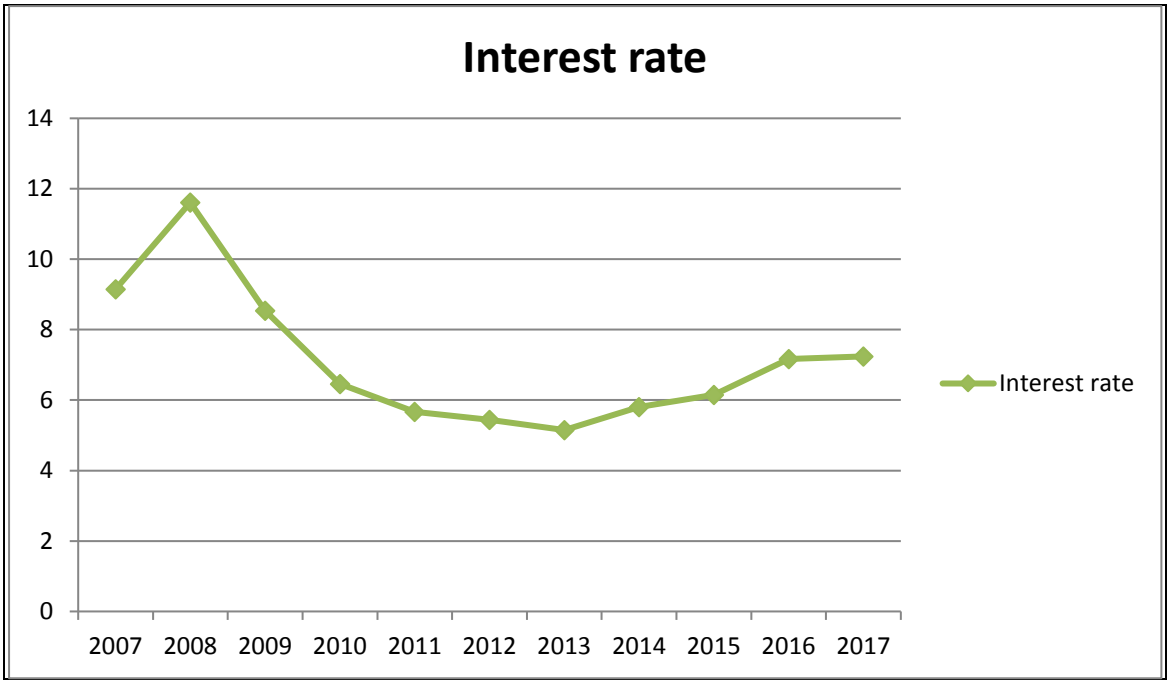
A	B	C	D	E	F
Year	**South African Deposit Interest rate (%)**	**Absa 's Aggregate savings deposits ZAR= Millions**	**Absa's Aggregate Investment funds ZAR = Millions**	**South Africa's Aggregate savings deposit ZAR = Millions (Column C *5)**	**South Africa's Aggregate Investment funds ZAR = Millions (Column D *5)**
2007	9.15	733,126,84.2	276,265,94.12	366,563,421	138,132,970.60
2008	11.61	821,823,48.5	238,486,51.14	410,911,742.5	119,243,255.70
2009	8.54	624,982,96.8	304,515,48.57	312,491,484.0	152,257,742.90
2010	6.46	324,568,26.0	635,862,59.69	162,284,130.0	317,931,298.50
2011	5.67	268,951,36.8	651,264,65.24	134,475,684.0	325,632,326.20
2012	5.44	228,250,45.3	684,650,18.93	114,125,226.5	342,325,094.65
2013	5.15	217,634,50.4	774,605,45.4	108,817,252.0	387,302,727.0
2014	5.80	281,524,39.1	624,964,15.1	140,762,195.5	312,482,075.50
2015	6.15	310,706,29.7	593,130,55.05	155,353,148.5	296,565,275.25
2016	7.17	492,835,45.39	379,492,20.5	246,417,726.95	189,746,102.50
2017	7.24	513,714,12.2	317,615,58.7	256,857,061.0	158,807,793.50

Source: y charts.com and Absa Group Limited (2018) (Ycharts, 2018)**.**

The data in column C and D was sourced from Absa Group Limited Savings and Investments Business unit within the Retail and Business Banking (RBB) division. Column E and Column F represent the aggregate savings and investment respectively for the five big retail banks (First National Bank; Absa; Capitec; Nedbank and Standard Bank) in South Africa, based on the assumption and multiplication of the savings and investment figures for Absa multiplied by 5.

As indicated from the above table, the South African Deposit Interest rate in 2007 was 9.15 %. In 2008 the South African Deposit Interest rate increased to its highest at 11.61%. In 2009 the South African Deposit Interest rate decreased to 8.54%. In 2010 the South African Deposit Interest rate decreased to further to 6.46%. In 2011 the South African Deposit Interest rate decreased further to 5.67%. In 2012 the South African Deposit Interest rate decreased further to 5.44%. In 2013 the South African Deposit Interest rate decreased further to its lowest to 5.15 %. In 2014 the South African Deposit Interest rate increased to the 5.80%. In 2015 the South African Deposit Interest rate increased to the 6.15%. In 2016 the South African Deposit Interest rate increased further to 7.17%. In 2017 the South African Deposit Interest rate increased further to 7.24%.

Figure 4.1 Trend of Interest rate (2007 - 2017)



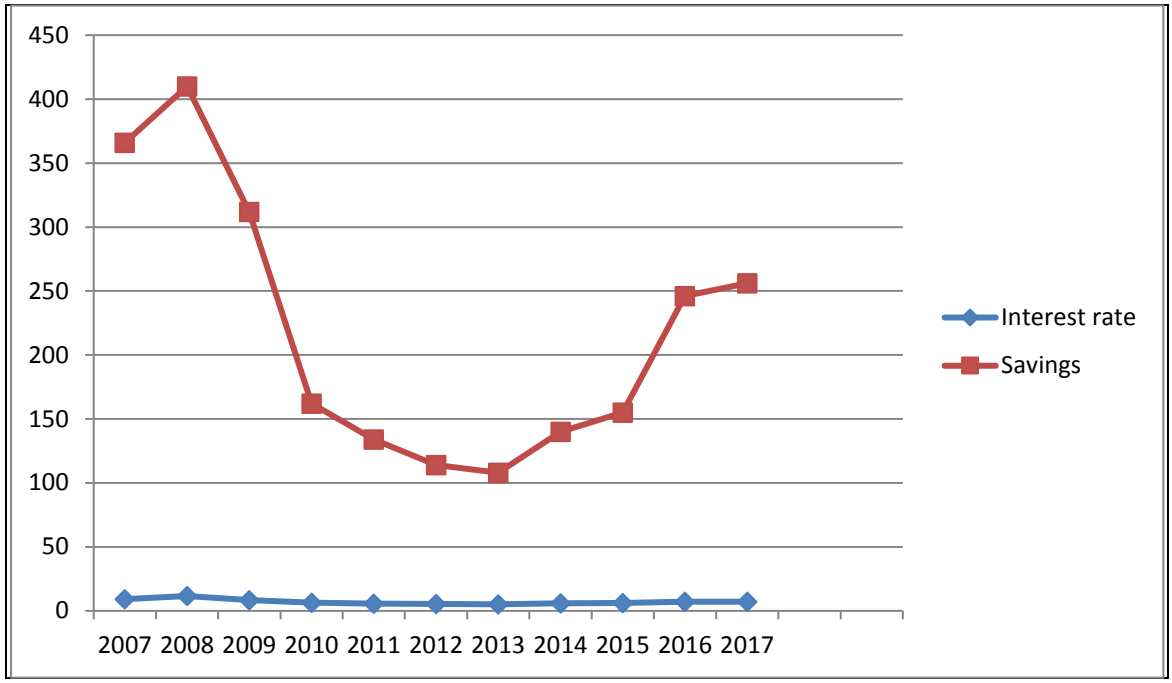
Source: Y charts.com

In the case of funds granted by the banks for investment purposes, the data indicates that from 2007 to 2008, there was a decrease from ZAR138 million to 119 million. From 2008 to 2009 there was an increase in the funds granted by banks for investment purposes from ZAR119 million to ZAR152 million. From 2009 to 2010 there was a significant increase in the funds granted by banks for investment purposes from ZAR 152 million to ZAR 317 million.

From 2010 to 2011 there was an increase in the funds granted by banks for investment purposes from ZAR 317 million to ZAR 325 million. From 2011 to 2012 there was a slight increase in the funds granted by banks for investment purposes from ZAR 325 million to ZAR 342 million.

From 2012 to 2013 there was an increase in the funds granted by banks for investment purposes from ZAR 342 million to ZAR 387 million. From 2013 to 2014 there was a decrease in the funds granted by banks for investment purposes from ZAR 378 million to ZAR312 million. It can be observed that, there was a steady decrease from 2014 (312 million) to 2015 (296 million). From 2015 to 2016 there was a decrease from ZAR 296 million to ZAR 189 million. From 2016 to 2017 there was a decrease from ZAR 189 million to ZAR 185 million. The investment funds peaked at ZAR 387 million in 2013.

Figure 4.2 Trend of savings and interest rate (2007 to 2017)



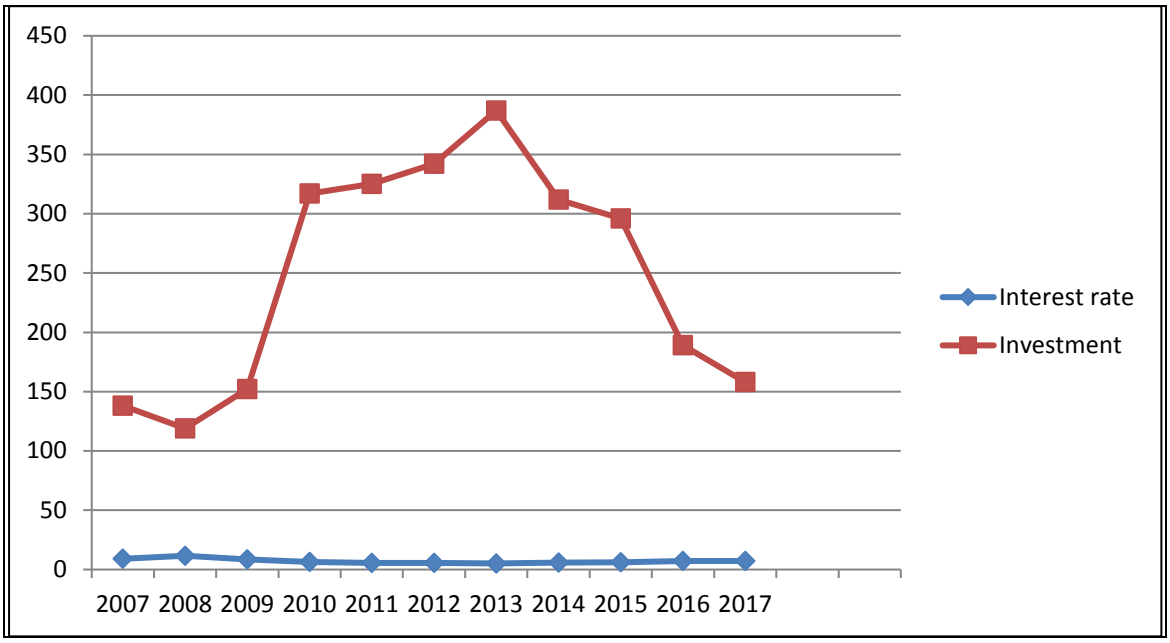
Source: Y charts.com and Absa Group Limited (2018)

In the case of funds received by the banks for savings deposit for the period under review, the data indicates that from 2007 to 2008 there was an increase in the savings deposits from ZAR 366 million to ZAR 410 million respectively; from 2008

to 2009 there was a significant drop from ZAR 410 million to ZAR 312 million, which can be largely attributed to the world financial crisis.

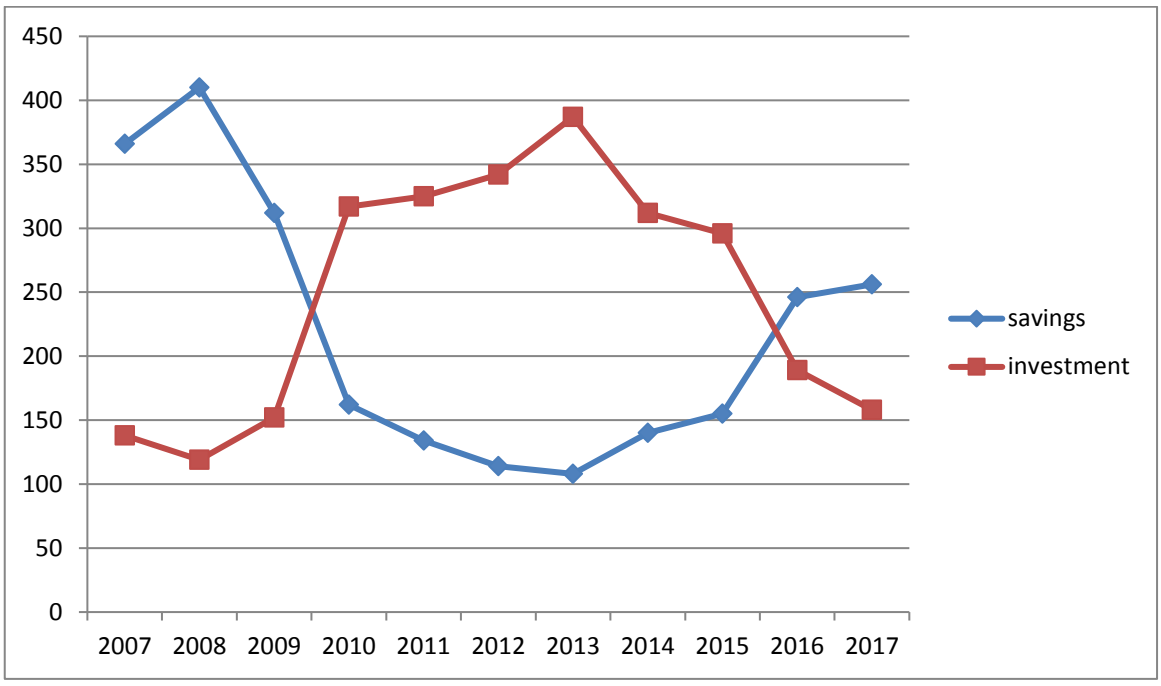
From 2009 to 2010 there was further significant decrease in the savings received by the banks for savings deposit from ZAR 312 million to ZAR 162 million which can be attributed to the decline in the deposit interest rate from 8.54 % to 6.46%. From 2010 to 2011 there was further slight decrease in the savings received by the banks for savings deposit from ZAR 162 million to ZAR 134 million which can be attributed to the decline in the deposit interest rate from 6.46% to 5.67%. From 2011 to 2012 there was there was further slight decrease in the savings received by the banks for savings deposit from 134 million to 114 million. From 2012 to 2013 there was a further slight decrease in the savings received by the banks for savings deposit from ZAR 114 million to ZAR 108 million which can be attributed to the decline in the deposit interest rate. From 2013 to 2014 showed a turning point where there was an increase in savings received by the banks for savings deposit from ZAR108 million to ZAR 140 million. From 2014 to 2015 showed a turning point where there was an increase in savings received by the banks for savings deposit from ZAR 140 million to ZAR155 million. From 2015 to 2016 there was a further increase in savings received by the banks for savings deposit from ZAR 155 million to ZAR 246 million which can be attributed to the increase in the interest rate from 6.15% to 7.17%. From 2016 to 2017 there was a further increase in savings received by the banks for savings deposit from ZAR 246 million to ZAR 256 million.

Figure 4.3 Trend of Interest rate and investment (2007 - 2017)



Source: Y charts.com and Absa Group Limited (2018)

The correlation between investment funds and savings deposits from 2007–2017 illustrated in the below figure 4.4.



Source: Y charts.com and Absa Group Limited (2018)

Frequencies

Statistics		
savings		
N	Valid	11
	Missing	0
Mean		218.4545
Std. Error of Mean		32.04978
Median		162.0000
Mode		108.00[a]
Std. Deviation		106.29710
Variance		11299.073
Skewness		.725
Std. Error of Skewness		.661
Kurtosis		-.889
Std. Error of Kurtosis		1.279
Range		302.00
Minimum		108.00
Maximum		410.00
a. Multiple modes exist. The smallest value is shown		

Statistics

investment		
N	Valid	11
	Missing	0
Mean		248.6364
Std. Error of Mean		29.35373
Median		296.0000
Mode		119.00a
Std. Deviation		97.35530
Variance		9478.055
Skewness		-.106
Std. Error of Skewness		.661
Kurtosis		-1.883
Std. Error of Kurtosis		1.279
Range		268.00
Minimum		119.00
Maximum		387.00
a. Multiple modes exist. The smallest value is shown		

Based on the secondary data analysed, below are the extracted results. The hypotheses were tested in three steps. These are: Step 1: Restatement of the Hypotheses; Step 2: Presentation of SPSS model results; Step 3: Decision Criteria and Step 4: Decision

Test of Hypothesis two - Step One: Restatement of Hypothesis

The hypothesis is restated in Null and Alternative forms as follows:

H_0: There is no positive significance impact of interest rate on Savings in South Africa; H_a: There is a positive significance impact of interest rate on savings in South Africa.

Step two: Presentation of SPSS model results

Table 4.2 Model summary for Hypothesis one

Model	R	R square	Adjusted R square	t-value	Beta	Durbin Watson
1	0.970	0.941	0.934	11.963	9.7	2.218

Source: Appendix 1

Note:

R = Correlation coefficient or beta

R2 = Coefficient of Determination

Adj. R2 = Adjusted Coefficient of Determination

DW = Durbin Watson (d) test statistic

T-value = Student t – test statistic

F = F – test statistics

Step three: Decision Criterion

The t – value is 11.963 and from the above equation the coefficient of the interest rate is 5.2 this indicates that there is a positive significant impact of interest rate on aggregate savings. The SPSS output results from model 1 indicate that the correlation coefficient (R) is 0.970 and beta indicates that it has a positive correlation, which indicates that for the period under review, an increase in

interest rate leads to an increase in aggregate savings. The d test statistics value equals 2.218 shows no autocorrelation. The R square also known as the coefficient of determination value 0.948 indicates that the correlation is 94.1%.

Step four: Decision

From step one above, the Null hypothesis is rejected and the alternative hypothesis is accepted which states there is a positive significant impact on savings in South Africa.

Test of Hypothesis two - Step 1: Restatement of Hypothesis

The hypothesis is restated in Null and Alternative forms as follows:

H_0: There is no positive significance impact of interest rate on Investment in South Africa.

H_a: There is a positive significance impact of interest rate on Investment in South Africa.

Step 2: Presentation of SPSS model results

Table 4.3 Model summary for Hypothesis one

Model	R	R square	Adjusted R square	t-value	Beta	Durbin Watson
1	0.879	0.772	0.747	- 5.519	-.879	1.491

Source: Appendix 2

Note:

R = Correlation coefficient or beta

R2 = Coefficient of Determination

Adj. R2 = Adjusted Coefficient of Determination

DW = Durbin Watson (d) test statistic

T-value = Student t – test statistic

F = F – test statistics

Step 3: Decision Criterion

The t-value is - 5.519 and from the equation the coefficient of Interest rate is -43.74 thus there is a negative significant impact of interest on aggregate investment in South Africa. The correlation coefficient (R) is 0.879 and beta indicates that it has a negative correlation which indicates that for the period under review, an increase in interest rate leads to a decrease in aggregate investment. The d test statistics value equals 1.491 shows positive autocorrelation. The R square also known as the coefficient of determination value 0.772 indicates that the correlation is 77.2 %.

Step 4: Decision

From step one above, the Null hypothesis which stipulates that there is no positive significant impact of interest rate on investment in South Africa is accepted and the alternative hypothesis is rejected.

Test of hypothesis three - The hypothesis is restated in Null and Alternative forms as follows: H_0: There is no negative significance impact of Savings on Investment in South Africa. H_a: There is a negative significance impact of interest rate on Investment in South Africa.

Step 2: Presentation of SPSS model results

Table 4.4 Model summary for Hypothesis one

Model	R	R square	Adjusted R square	t-value	Beta	Durbin Watson
1	0.952	0.907	0.897	-9.374	-0.952	1.094

Source: Appendix 3

Note:

R = Correlation coefficient or beta

R2 = Coefficient of Determination

Adj. R2 = Adjusted Coefficient of Determination

DW = Durbin Watson (d) test statistic

T-value = Student t – test statistic

F = F – test statistics

Step 3: Decision Criterion

The t-value is -9.374 and the equation the coefficient of aggregate savings is -.872, thus there is a negative significant impact of aggregate savings on aggregate investment in South Africa. The correlation coefficient (R) is 0.952 and the beta indicates that it has negative correlation, which indicates that for the period under review, an increase in aggregate savings leads to a decrease in aggregate investment. A d-test statistic value of 1.094 shows a negative autocorrelation. The variation that can be explained by the equation is 90.7% as indicated by the coefficient of determination.

Step 4: Decision

From the above, the Null hypothesis is rejected and the alternative hypothesis which states that there is a negative significant impact of aggregate savings on Investment in South Africa is accepted.

Summary, Recommendations, and Conclusions

The chapter sets out to present the summary of the findings obtained from the results in chapter of empirical test results.

Based on the hypothesis tested in this research paper, we found out the following:

1) There is a positive significant impact that interest rates have on aggregate savings in South Africa. The positive interest rate coefficient of 52.72 indicates the positive impact and indicates that there is a positive correlation between aggregate savings and interests in the South African economy. The positive correlation between aggregate savings interest rates is articulated in research done by Shaw and McKinnon in 1973. Shaw and McKinnon identified that interest rates have a positive impact economic growth and savings thus the link between interest rate responsiveness and savings, as postulated by the McKinnon-Shaw is positive (Shaw, 1973).
   McKinnon (1973) and Shaw (1973) suggested that when government lessens restrictions and regulations, which will lead to an increase in real interest rates will result in an increase in savings and investment and ultimately lead to economic growth (Mckinnon, 1973).
   The South African Reserve Bank also highlights the positive correlation between interests and savings and postulates that relatively higher interest rates in South Africa are required increase or incentive the low savings ratio in South Africa.

2) There is a negative strong impact that interest rates have on aggregate investment in South Africa. The negative interest rate coefficient of -43.741 and a t – value of 5.519 is above the rule of thumb reference point of 2. Also there was a negative correlation between aggregate investment and interest rate in South Africa, thus an increase in interest rate will result in an to decline in aggregate investment in South Africa and vice versa .

3) Aggregate savings have a negative impact on aggregate investment in South Africa. This was confirmed by a negative aggregate savings coefficient of - 0.872 and a t –value of -9.374 greater that the rule of thumb bench mark value of two for significance. There was also a negative correlation between aggregate savings and aggregate investment thus an increase in aggregate savings will lead to a decrease in aggregate investment in South Africa.

Recommendations

As identified in the results above, that when the rate of interest is high, the levels of savings will increase because depositors are incentivized and will benefit, as they will have more returns on their deposits. The opposite will apply if interest rate declines, the levels of savings will decline, as depositors will be less incentivized to deposit their money with the bank and depositors will be discouraged to save.

An increase in the level of interest rate increases leads to a decline in the level of investment because the cost for acquiring funds increases and a decline in the level of interest rate leads to an increase in the level of investment as the cost of acquiring funds for investment purposes declines.

The results also indicate that the increase in the level of savings leads to an increase in the level of investment because more money will be available to investors to fund capital projects in the economy. Thus the following recommendations are made:

1) Understanding the savings and investment process and its correlation to interest rates can assist the South African Reserve Bank (SARB) and national government in making policy decisions aimed at promoting economic growth. The South African Reserve Bank (SARB) should ensure that interest rate applied to savings is to influence and stimulate savings rather than household consumption as it has been proven from the research that interest rate have a positive impact on savings but a negative impact on investments in South Africa.

2) Investment within the private sector of South Africa is required for various: for local businesses to purchase new machinery, buildings and to raise capital to increase the capacity of the plant. Investment within the public sector of South Africa is required for the public sector to carry out public works such as improving the infrastructure within the country, develop new or renovating houses, roads, hospitals, bridges etc. Thus investment improves the country's productive capacity which results in an increase in the standard of living for South Africans. The processes of savings and investment play a key role in the circular flow of income and in determining the level of income, therefore the South African Reserve Bank should ensure that the interest rate on deposits and loans are adjusted to stimulate investment thus leading to economic growth, an increase in the South Africa's gross domestic product and an increase in the standard of living for South Africans (Sunday, 2012).

3) As the increase in the level of savings leads to an increase in the level of investment as stated above, therefore the South African national government should encourage the culture of saving as the link between investment and savings as there is a positive relationship which means an increase in savings results in an increase in investment.

Conclusions

As identified in this research that interest rates favours savers who save money in the bank when the interest rate is high and to the detriment for savers when the interest rate is low. Savings is viewed as beneficial both for individuals and for the society at large, thus the national government driving a savings culture will lead to an increase in savings and will lead to a growth in the economy. It was due to this effect that the classists believed in thriftiness. Classists were of the view that an individual savings was a good private as well as social virtue. The Keynes were of a different view as they disagree that individual savings is a social virtue but rather supported the view that individual savings is a social vice. The Keynes argues that an increase in individual savings will lead to a curtailment in personal spending and a decline in demand. An increase in savings leads to an increase in

investment which is crucial for the economic development of an economy. An increase in the investment in the economy will leads to the creation of jobs which will lead to an increase in demand, prices, profits and more production expansion which will lead to an economic growth. Therefore it could be said that interest rates plays a crucial role in the growth of the economy of South Africa (Sunday, 2012).

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