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A Time Series Analysis of the determinants of Savings in Namibia

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Abstract
The driving objective of this article was to empirically establish the determinants of savings in Namibia through the use of co-integration and error correction mechanisms for the period running from 1991 to 2012. We made use of quarterly and annual macroeconomic data sets. The quarterly data used were derived from the annual data set that we used in this study. The article relied heavily on unit root tests, co-integration and error correction procedures as ways of investigating the research issue under consideration. First, the time series characteristics of the variables used were ascertained with the help of the augmented Dickey-Fuller unit root procedure. Second, the long-run relationship between savings and its determinants was examined using the procedure suggested in the literature by Johansen and Juselius.

The results of the co-integration tests suggest that there is a long-run relationship between savings and the explanatory variables used in the study. The results suggest that inflation and income have positive impact on savings, whilst population growth rate has negative effects on savings. Further, deposit rate and financial deepening have no significant effect on savings. Additionally, the results re-enforces the work of Iipumbu et al (1999). Finally, the need to achieve a higher rate of savings in Namibia by improving upon income levels cannot be overstretched.
Key Words: Macroeconomic time series data, Co-integration, Namibia, Savings, Income

INTRODUCTION

Economists have long recognized the fundamental role of savings in the promotion of economic growth and development in both primitive and modern economies of today. Saving is necessary to fund investment in a primitive subsistence economy. Indeed, in the absence of either money or monetary assets, saving and investment will tend to be simultaneous acts. This is so, since saving and investment are likely to be undertaken by the same people. Additionally, saving is also likely to be invested in the sector in which saving takes place. However, in an economy that is highly monetized, modern and sophisticated like those of the advanced capitalist economies such as Germany, France, The United States of America and Japan just to mention a few of them, we have observed an increasing separation of those who want to save from those who are in dire need of investment outlets for their money. The literature also distinguishes between three forms of savings, namely, voluntary savings, involuntary savings and forced saving (Thirlwall, 2011:387-388). Voluntary savings are savings that do arise as a result of a deliberate and voluntary reduction in ones disposal income. Households and the business sector could be a good source of voluntary savings. Involuntary savings are savings arising from involuntary reductions in consumption. Taxes, social insurance contributions and schemes are measures involving involuntary reductions in consumption. Forced saving occur when people save in order to reduce or control the damaging effect of inflation on their consumption.

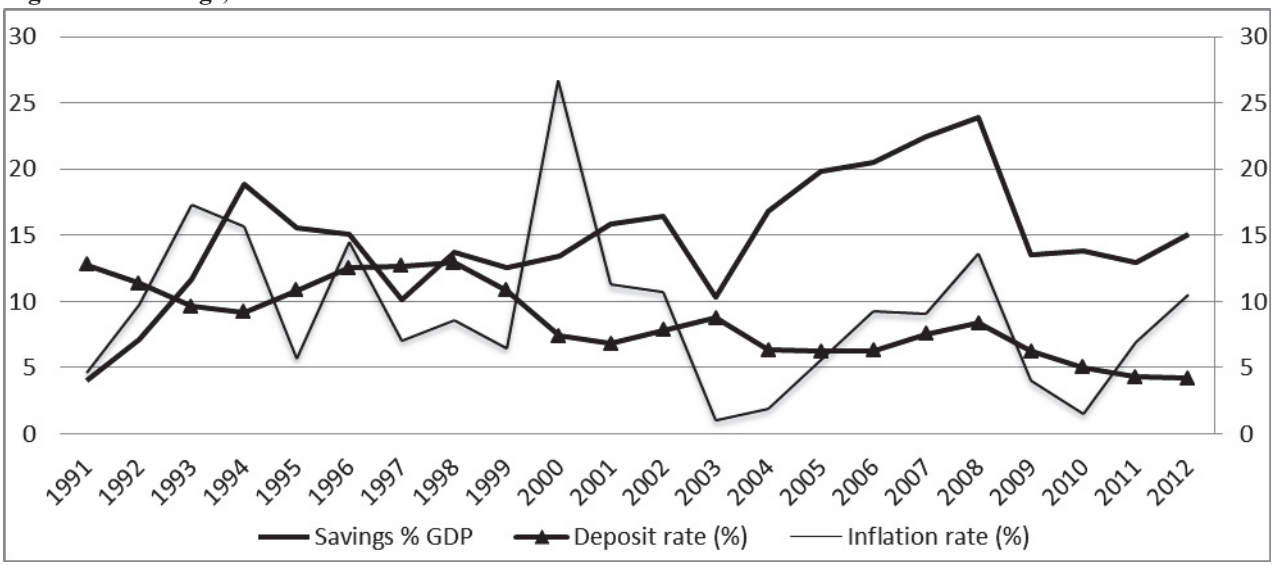
With respect to Namibia, studies relating to savings, be it at the micro or macro level are very few and mainly qualitative. Additionally, domestic savings mobilization remains one of key challenges undermining the development agenda of the government of Namibia. Accordingly, this paper investigates the determinants of savings in Namibia. More specifically, this study compliments the previous literature on saving determinants in Namibia in the following ways: Firstly, it uses the longest time series data available so far from 1991 to 2012. Secondly, it uses modern time series procedures. Finally, it makes use of macroeconomic variables that have not been used in previous studies. The rest of the article is structured as follows: In section two, we made use of a graph to show the trend in respect of selected macroeconomic variables, including savings in Namibia. In section three, we reviewed related empirical studies. In section four, we presented the data and the procedures used in carrying out this study; while in section five, we discussed the various econometric results obtained through the

application of the procedures developed in section four. Finally, we presented concluding remarks, as well as, the policy implications arising from this study in section six.

SELECTED MACROECONOMIC VARIABLES' TRENDS IN NAMIBIA

Figure 2.1, which is appearing below depicts the trend in savings, interest rate and inflation rate in Namibia for the period running from 1991 to 2012.

Figure 2.1: Savings, Interest rate and Inflation rate in Namibia: 1991 – 2012



Source: Author's compilation, 2013

As evident from Figure 2.1 above, savings as a percentage of GDP reached a peak of 14.71 percent in 2008, whilst the lowest savings rate was recorded in 1991 at 4.02 percent, but averaged at 14.71 during the past two decades. Similarly, the deposit rate on the average was 8.55 percent during the same period, with the highest and lowest rates recorded at 4.21 percent and 12.94 percent in 1998 and 2012, respectively. Inflation rate was highest and lowest at 26.72 percent and 1.01 percent in 2000 and 2003, respectively.

LITERATURE REVIEW

Lots of empirical studies concerning the determinants of saving are available in the literature. In this section, we reviewed some of them, bearing in mind the driving objective of this study.

(Giancarlo et. al., 1992:529-547) using a sample of ten developing countries estimated their respective household saving functions by combining time-series and cross-country observations. These researchers tested households' responses to income and growth, rates of return, monetary wealth, foreign saving, and demographic variables. Their results indicate that income and wealth variables affect saving positively, while foreign saving and monetary assets have the opposite effects on saving. It was also observed that Inflation and the interest rate variables did not show clear effects on saving. These results could be different if other techniques are invoked and applied in carrying out this study.

Using Pakistan as a laboratory test ground, (Husain, 1996:49-70) in his empirical analysis of the long-run behaviour of saving in Pakistan observed that financial deepening accounted for much of the rise in private saving. This result contrasted with the experience of the South-East Asia countries, where the demographic structure of the population changed significantly over the past two decades or so. For Pakistan, its high rates of population growth have kept the country's population age structure virtually the same. This could be the main reason why there is a rather wide disparity in saving rates between Pakistan and South-East Asia. The use of both economic and demographic factors by Husain, as well as, Giancarlo et. al. In their investigations is highly commendable.

(Loayza, et al., 2000:393-414) investigated the determinants of saving rates in developing countries by paying special attention to the relationship between growth and saving as well as the impact of specific policies on

saving rates. T hey relied mainly upon both qualitative and quantitative approaches in carrying out their study. They observed while economies such as China, India, including the East Asian miracle economies have generally experienced an increase in their saving rates, countries such as South Africa, countries of the former Soviet Union as well as the Baltic states have experienced the reverse. The study went further to implicate the main drivers of savings. The study concluded that growth prima facie causes saving and not the reverse.

Using panel data based on China (Horioka, et. al., 2007) analysed the determinants of the household saving rate for the period 1995 to 2004. Lagged saving rate, income growth rate, real interest rate and inflation rate are important factors responsible for the rising saving rates in China for the period under consideration. The variables relating to the age structure of the population did not have a significant impact on the household saving rate. These results, thus, do provide a kind of mixed support for the life cycle hypothesis, as well as, the permanent income hypothesis.

(Kibet, et. al., 2009:137) by using smallholder farmers, entrepreneurs and teachers in rural areas of Kenya investigated the determinants of household saving through the use of the Ordinary Least Squares Regression method (OLS). Their main finding was that household saving is determined by the level of education, dependency ratio, service charge, transport costs, credit access, and type of occupation, household income, age and gender of household head. Policy makers would need to use the results arising from this study with caution since the method utilised in the study could lead to spurious results. We recommended further investigations in respect of this study that uses more robust time series techniques like those that have been used by (Horioka, et. al., 2006:214); (Loayza, et al., 2000:393) and (Giancarlo et. al., 1992:529).

(Agrawal, et. al., 2010:273-295) investigated the determinants of savings behaviour in India for the period 1962 to 2004 by invoking and applying co-integration procedures. On one hand, the study found that higher income per capita, as well as, greater access to banking facilities significantly improved savings in India during the period under consideration. On the other hand, the study found foreign savings and public savings to have negative impacts on both private and household savings. Additionally, the study found that income per capita granger causes saving and not the reverse. One apparent policy implication arising from this study is that, we need higher rates of growth in order to encourage and mobilise greater domestic savings in the economy. Policies should, therefore, be targeted at stimulating growth, if we are indeed, serious about promoting higher saving rates in the national economy.

(Gedela, 2012:108-114) assessed the determinants of saving behaviour in rural and tribal households in India. Using a combination of simple and multiple regression models, the results ultimately reveals that the age of the head of the household, sex, dependency ratio, income and medical expenditure are significant factors influencing the saving behaviour in both areas that were chosen for the study. In particular, it was found that in the tribal area, dependency ratio and medical expenditure had greater dampening effect on household savings. These results are not surprising, if one takes into consideration the economic characteristics of rural cum tribal areas. The outcome of this study also reinforces the results obtained by (Kibet, et. al., 2009:137) in some ways.

(Nwachukwu, 2012) by employing time series data for Nigeria for the period covering 1970 to 2010 examined the determinants of private saving in Nigeria. He relied upon co-integration procedures to estimate a saving rate function for Nigeria within the framework of the Life Cycle Hypothesis. The results of the analysis show that the saving rate rises with both the growth rate of disposable income and the real interest rate on bank deposits. The degree of financial debt was also observed to have a negative impact on saving behaviour in Nigeria. Public saving seems not to crowd-out private savings; an indication that government policies that are aimed at improving the fiscal balance has the potential of bringing about a substantial increase in the national saving rate.

(Sandri et. al., 2012) in a study based on a panel of advanced economies, and with the following title "Precautionary Savings in the Great Recession" found that greater labour income uncertainty was significantly associated with higher household savings. The study also maintained that heightened uncertainty since the onset of the Great Recession has materially increased saving rates, contributing to lower consumption and GDP growth. Further, the estimates arising from the study suggests that at least sixty six percent of the sharp increase in household saving rates between 2007 and 2009 can be attributed to the precautionary savings motive. These results also reinforce the concept of "forced saving" in the literature.

(Iipumbu et. al., 1999:1-10) reviews the developments in saving and investment in Namibia over a period of seventeen years. The study employed co-integration and error correction techniques to assess the determinants of saving and investment in Namibia. The study found that private saving in Namibia is significantly influenced by real income, while it is very doubtful if bank deposit rates have any influence on saving in Namibia. In

particular, real lending rates, inflation, real income and government investments were found to be important determinants of investments in Namibia. The study recommended the need for Namibia to address critical challenges in its economy, especially the shortages of skilled labour in order to achieve higher growth targets in future.

(Uanguta, et al., 2004:1-12) analysed the structure and nature of savings in Namibia with the use of qualitative techniques. The study reveals that contractual savings which consist of pension fund contributions and life insurance premiums dominate the structure of savings in Namibia, and indeed do account for about 60 percent of the total private domestic savings. This is closely followed by commercial banks savings, which account for approximately 38 percent of the total private domestic savings in Namibia. This high degree of domestic savings does not seem to have been utilised sufficiently to propel domestic investment. The study, therefore, recommends pro-investment policies for Namibia.

In summary, all the literature reviewed regarding the determinants of saving are pointing to the fact that a combination of economic, social and demographic factors do come into play in terms of explaining saving behaviour, be it at the micro or macro level. Besides, we also observed that differences in the choice of techniques did make some impacts on the final results that the researchers obtained from their various studies. Additionally, the research techniques and procedures used in this study are influenced in some ways by the literature reviewed in section three.

DATA, EMPIRICAL MODEL AND METHODOLOGY

Data

The study relied upon quarterly macroeconomic time series data for the period running from 1991 to 2012. The variables used in this study include domestic savings, inflation rate, deposit interest rate, broad money (M2), population growth rate and gross domestic income. All the macroeconomic data used in this study were sourced from the World Bank World Wide Web. These data sets were in turn converted into quarterly data, using the quadratic-match average frequency conversion method. The dependent variable, savings, is measured in terms of domestic savings as a percentage of GDP. The inflation rate is computed as a percentage change in the Namibian GDP deflator. Gross domestic income is measured in millions of Namibia dollars, while broad money supply (M2) is measured as a percentage of GDP. The deposit interest rate measures the average interest rate offered by commercial banks on savings' accounts.

Empirical Model

A review of the literature provided the basis for the empirical model for savings, which is specified in the following way:

$$LS_t = \varphi_0 + \varphi_1 LGDI_t + \varphi_2 LINFR_t + \varphi_3 LDI_t + \varphi_4 LM2_t + \varphi_5 LPOP_t + \varphi_6 LGDI_{t-1} + \mu_t \ldots (1)$$

where: φ_0 and φ_i denote the constant term and numerical coefficients, respectively; t refers to time factor, while L represents natural logarithm.

Additionally, S, which represents savings is the dependent variable. Further, Gross domestic income (denoted by *GDI*) has a positive relationship with savings. Therefore, it is expected to have a positive sign. Inflation rate is denoted by $INFR$ and its coefficient is expected to either be positively or negatively signed, depending on the situation at hand. On one hand, high inflation rate could erode consumer income and subsequently discourage savings. On the other hand, households could cushion themselves from the adverse effects of inflation by saving more. In consideration of the permanent income hypothesis, lagged variable for gross domestic income was included in the model. *DI* denotes deposit interest rate. Theoretical knowledge tells us that, there should be a positive relationship between savings and deposit interest rate. $M2$, which stands for broad money supply is also expected to be positively signed. Further, population growth rate (*POP*), which is a proxy variable for age dependency ratio is expected to be negatively signed.

Methodology

In most cases, time series data are characterised by non-stationarity. Regression involving non-stationary data often leads to spurious regression results. In such a case, regression results will appear to be statistically significant, when indeed, all that is obtained is evidence of accidental correlations rather than meaningful causal relationships (Harris and Sollis, 2003:32). Spurious regression could lead to invalid inferences. Therefore, the

standard hypothesis testing procedures, such as, t tests and F tests may give misleading results. Therefore, in order to eliminate the problem of spurious regression, the variables included in a regression model must first be differenced to make them stationary.

If a variable must be differenced *d* times to make it stationary, then such a variable is said to have *d* unit roots or integrated of order *d* or I(d). If two variables are integrated of order *d* and *b* or I(*d, b)*, then the two series are said to be co-integrated, that is, if their linear combination is stationary (Harris and Sollis, 2003:34). Thus, co-integration between variables would imply that, there is a long-run equilibrium relationship among the concerned variables, such that, they will converge over time. In order to model the stationarity properties of the data used in this study, we invoked and applied the Johansen-Juselius Co-integration Methodology, which involves two fundamental steps. Firstly, we test for unit roots in order to establish the order of integration of each variable. Secondly, we test for the presence of a long-run equilibrium among the variables used in the study. The Johansen-Juselius approach is often preferred in time series studies, when it comes to the estimation of a multivariate system, since it prevents the biasedness often associated with OLS estimations.

Unit root tests

Several ways of testing for unit roots are available in the literature. Examples of such techniques are the Dickey-Fuller (DF) test, Augmented Dickey-Fuller (ADF) test, co-integration regression Durbin-Watson (CRDW) test, Phillips-Perron (PP) test, Kahn and Ogaki test, Leyborne-McCabetest test, as well as, the Kwiatkowski, Phillips, Schmidt and Shin (KPSS) test. The DF, ADF and PP tests are the most popular types of unit root tests applied in empirical work. This is mainly due to their simplicity and general nature (Harris and Sollis, 2003:42). Therefore, this study applies the ADF test.

The ADF test is preferred to the DF test because of its technical superiority over the DF test. More specifically, it corrects for the weaknesses of the DF test by assuming that y follows an $AR(p)$ rather than an $AR(1)$ process. The ADF test involves estimating the following equation:

$$\Delta y_t = \rho^* y_{t-1} + \rho_1 \Delta y_{t-1} + \rho_2 \Delta y_{t-2} + \cdots + \rho_{p-1} \Delta y_{t-p+1} + u_t \qquad (2)$$

where $\rho^* = (\rho_1 + \rho_2 + \cdots + \rho_p) - 1$

If $\rho^* = 0$, then y contains a unit root. The null hypothesis of a unit root is not rejected, if the DF t-statistic is greater than the DF critical value. It should be noted that the appropriate lag length should be used in implementing this test, since too few lags may result in rejecting the null hypothesis, when in fact, it is true. Further, too many lags might reduce the potency of the test.

The Johansen-Juselius Cointegration Approach

The vector z_t is defined using an unrestricted vector autoregression (VAR):

$$z_t = A_1 z_{t-1} + \ldots + A_k z_{t-k} + u_t \qquad (3)$$

where; z_t is $(n \times 1)$ vector of variables; A_i is an $(n \times n)$ matrix of parameters, u_t denotes residuals or $(n \times 1)$ vector of innovations.

The vector, z_t, consists of (n) potentially endogenous variables. Each variable in the model is regressed on both its lagged values and the lagged values of other variables in the system. Equation (4) is estimated using OLS technique. The VAR model can be reformulated into a Vector Error Correction model (VECM) form in the following way:

$$\Delta z_t = \Gamma_1 \Delta z_{t-1} + \ldots + \Gamma_{k-1} \Delta z_{t-k+1} + \Pi z_{t-k} + u_t \qquad (4)$$

where: $\Gamma_i = -(I - \mathrm{A}_1 - \cdots - \mathrm{A}_i)$; $(i = 1, \ldots, k-1)$ and $\Pi = -(I - \mathrm{A}_1 - \cdots - \mathrm{A}_k)$

Harris and Sollis (2003) states that the estimates of Γ_i and Π describes the short-run and long-run adjustment to changes in z_t, respectively. The vector Π denotes a matrix of long-run coefficients, defined as a multiple of two $(n \times r)$ vectors, (α) and (β); and they, indeed, signify the speed of adjustment to disequilibrium, and a matrix of long-run coefficients, respectively. Equation (5) encompasses $\beta' z_{t-k}$, which represents up to $(n-1)$

cointegration relationships in the multivariate model. If the rank of Π is equal to zero, it indicates that there are no cointegration relationships, that is, $(r = 0)$, where r is the number of cointegration relationships in the system. In a case where Π has a full rank, that is, $(r = n)$, it implies that all the variables in the VAR are stationary. In most cases, Π has a reduced rank, that is, $r \leq (n - 1)$, which points to the fact that, there are r cointegration vectors or stationary relationships. In this study, co-integration is tested using trace statistics. The results obtained from our estimations through the application of the procedures developed in this section are presented, and subsequently discussed in the next section.

Empirical Results

Unit Root Tests

The results in respect of the unit root tests are presented in Table 1 below. In general terms, it indicates that all the variables have unit roots, that is, non-stationary, in levels. However, there were found to be stationary in first difference.

Table 1: Unit Root Test Results

	Level	First Difference
Variable	**ADF**	**ADF**
Sav	-3.699**	-4.041***
Pop	-2.549	-3.860**
M2	-2.271	-4.529***
Infr	-3.784**	-4.343***
GDI	-3.332*	-4.506***
DI	-3.230*	-4.079***

***/**/* indicate rejection of the null hypothesis of nonstationarity (there is unit root) at 1%/5%/10% significance level

Co-integration Results

Co-integration was determined using Johansen's trace statistics and the results are presented in Table 2 below. The results show that, there are at least two co-integrating vectors. Since, there is co-integration relationships among the variables, there is a prima facie case (econometric justification) for specifying a vector error correction model (VECM).

Table 2: Co-integration Test Results

H_0	H_a	Trace Statistic	5% Critical Value	Probability
r = 0	r ≥ 0	122.7316*	95.75366	0.0002
r ≤ 1	r ≥ 1	83.5108*	69.81889	0.0027
r ≤ 2	r ≥ 2	48.7651*	47.85613	0.0410
r ≤ 3	r ≥ 3	24.74964	29.79707	0.1706
r ≤ 4	r ≥ 4	6.149031	15.49471	0.6779
r ≤ 5	r ≥ 5	0.011700	3.841466	0.9136

Note: * Denotes rejection of the null hypothesis of no cointegration at 5% significance level

Results for the Long-run and short-run Models

The Table 3 appearing below shows the results of the long-run and short-run models estimations.

Table 3: Results for the long-run and short-run models estimations

Long run Model Variable	**Coefficient**	**t-statistic**
Constant	3.0786	1.140
GDI	2.6531	1.515
INFR	0.2935	7.146
DI	0.6687	3.649
M2	0.5936	2.583
POP	-2.1531	-5.168
GDI(-1)	-2.9353	-1.657

Error Correction Model

Constant	DGDI	DINFR	DDI	DM2	DPOP	DGDI(-1)	ECM(-1)
-0.01491	2.701701	0.111597	-0.0708	-0.09649	-1.64306	0.042413	0.56293
(-2.43741)	(4.4494)	(4.0224)	(-0.4285)	(-0.3094)	(-2.578)	(0.0815)	(5.7487)
Adj. R^2 = 0.62	F = 20.123	BPG = 7.292(0.399)		BG=2.441(0.295)		RR = 3.33(0.072)	

Note: BPG = Breusch-Pagan-Godfrey (Heteroskedasticity test), BG = Breusch-Godfrey (Serial Correlation test), RR = Ramsey Reset Test. Numbers in parentheses are t-statistics.

The error correction model results indicate that the model is heteroscedasticity and serial correlation free; and that, it is, also stable. Additionally, the results revealed that the major determinants of savings in Namibia are income, inflation rate, and population growth rate. Similarly, variables like interest rate, broad money supply and past income were found to be insignificant, when it comes to the determinants of savings in Namibia.

Further, the results show that a 1 percent increase in gross domestic income would lead to a 2.7 percent rise in savings. This result re-enforces consumption and savings theories, which postulate a positive relationship between savings and income. The fact that the coefficient of past income was insignificant suggests that the permanent income hypothesis is not applicable to Namibia. This also implies that past income does not influence household decisions to save in Namibia.

The coefficient of inflation rate was found to be significant and positive, implying that in times of high inflation, households could cushion themselves against the loss of purchasing power by saving more. Thus, a 1 percent increase in inflation rate would result in an increase in savings to the tune of 0.1 percent. As expected, population growth rate negatively influenced savings decisions. A 1 percent rise in population growth rate led to a decrease in savings to the tune of 1.6 percent; suggesting that any increase in dependence ratio would have a dampening effect on savings. The error correction term was observed to be significant and positive; implying that whenever saving is below its equilibrium value, there will be a self-correcting mechanism in place that would eventually enable the model to revert to its equilibrium value on the long-run.

CONCLUSION AND POLICY IMPLICATIONS

This study investigated the determinants of savings in Namibia using quarterly time series macroeconomic data running from the period 1991 to 2012 through the application of co-integration procedures and Vector Error Correction Mechanism (VECM). The analysis found that gross domestic income, inflation rate and population growth are major determinants of savings in Namibia. Similarly, low, alternatively, mild inflation, as well as, income can promote savings in various ways in the economy of Namibia. Further, population growth was found to have negative effects on savings. As the dependency ratio of a country increases the tendency is for savings to be discouraged for apparent reasons. However, factors such as deposit interest rate, financial deepening (measured by broad money supply as a ratio of GDP), as well as, past income were not helpful in explaining savings behaviour and decisions in Namibia. Given the above discussions, it is advisable for the government of Namibia to implement macroeconomic policies in its economy that would lead to a general improvement in

income levels; while concomitantly discouraging high population growth through appropriate and feasible anti-population policies, if Namibia is really enthusiastic about promoting savings. Policies that would reduce inflation rate would impact savings in terms of reduction in savings. Therefore, moderate inflation levels would encourage savings without significantly eroding its present value. We recommend that forthcoming and additional research concerning the issue under consideration should pay particular attention to the following fundamental issues: The choice of the research technique, the length of the time series data to be used, as well as, the nature of the macroeconomic data to be used, including the selection of the explanatory variables to be used. Finally, we believe that, if for nothing else, this study has contributed significantly in several ways in shedding light on the determinants of savings in Namibia.

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Appendix 1.1: Macroeconomic Time Series Data for Namibia, 1991 to 2012

YEAR/QUARTER	SAVINGS	DEPOSIT RATE	GROSS DOMESTIC INCOME	INFLATION RATE	M2	POPULATION GROWTH RATE
1991Q1	3.18124	13.23002604	21340318251	3.261012557	22.84987781	3.641481213
1991Q2	3.68358	12.94018229	22037867310	4.063796073	24.1238178	3.541585391
1991Q3	4.276163	12.6292448	22629030471	5.022857249	25.35686973	3.448357278
1991Q4	4.958988	12.29721355	23113807733	6.138196085	26.54903362	3.361796874
1992Q1	5.732055	11.94408855	23492199096	7.409812581	27.70030946	3.281904181
1992Q2	6.595365	11.5698698	23764204561	8.837706736	28.81069724	3.208679196
1992Q3	7.548917	11.17455729	23929824128	10.42187855	29.88019698	3.142121922
1992Q4	8.592711	10.75815104	23989057796	12.16232803	30.90880868	3.082232357
1993Q1	9.53207	10.06179688	23182474682	15.88880423	32.34694112	3.023047009
1993Q2	10.83422	9.706744792	23332708906	17.2099094	33.1136132	2.97887826
1993Q3	12.30448	9.434140625	23680329585	17.95539259	33.6592337	2.943762619
1993Q4	13.94286	9.243984375	24225336719	18.12525382	33.98380262	2.917700084
1994Q1	17.82355	9.0153125	25876250793	17.58652636	32.82612249	2.909568903
1994Q2	18.96847	9.0384375	26452622642	16.65833033	33.21306727	2.898061284
1994Q3	19.45182	9.192395833	26862972752	15.20769903	33.88343948	2.892055472
1994Q4	19.27361	9.477187499	27107301122	13.23463244	34.83723912	2.891551469
1995Q1	16.32139	10.21143229	26523599356	6.499427622	37.2871642	2.906720161
1995Q2	15.66501	10.6304427	26700687607	5.177371647	38.32273948	2.91315142
1995Q3	15.19204	11.05283854	26976557477	5.028761569	39.15666297	2.921016131
1995Q4	14.90247	11.47861979	27351208967	6.053597386	39.78893467	2.930314296
1996Q1	15.95771	12.16247396	28134872635	13.71681689	39.77930718	2.95327361
1996Q2	15.5704	12.49315104	28582995141	14.90256938	40.18437428	2.960547603
1996Q3	14.90194	12.72533854	29005807043	15.07579266	40.56388856	2.96436397
1996Q4	13.95233	12.85903646	29403308342	14.23648671	40.91785002	2.964722713
1997Q1	10.69586	12.63265625	29710000652	8.459230503	41.55013714	2.965884022

1997Q2	9.994222	12.67401041	30083080098	7.165034525	41.73144156	2.957623437
1997Q3	9.821706	12.72151041	30457048294	6.428477739	41.76564176	2.944201149
1997Q4	10.17832	12.77515625	30831905241	6.249560146	41.65273774	2.92561716
1998Q1	13.12546	13.21958333	31290578511	8.586593624	40.56480389	2.905493376
1998Q2	13.71576	13.13166667	31634041930	8.739629664	40.48886169	2.875137219
1998Q3	14.01062	12.89604167	31945223070	8.666980144	40.59698552	2.838170597
1998Q4	14.01005	12.51270833	32224121932	8.368645064	40.88917538	2.794593509
1999Q1	12.64997	11.81578125	32201217844	3.792728154	42.88715871	2.737276665
1999Q2	12.48415	11.20338541	32523360416	4.663780464	42.93878965	2.683330363
1999Q3	12.44851	10.50963541	32921028978	6.929905722	42.56579565	2.625625313
1999Q4	12.54307	9.734531247	33394223530	10.59110393	41.76817671	2.564161514
2000Q1	12.86071	8.232499999	34195663283	24.71105403	38.88270846	2.491723389
2000Q2	13.17849	7.552916667	34718822130	27.53692656	37.90112936	2.425628324
2000Q3	13.5893	7.050208334	35216419281	28.13240045	37.16021506	2.358660742
2000Q4	14.09315	6.724375001	35688454738	26.49747571	36.65996556	2.290820642
2001Q1	15.19699	6.765911459	36009037227	14.72284798	37.27989107	2.211928898
2001Q2	15.68411	6.717630209	36480305802	11.79084772	36.90916707	2.146415414
2001Q3	16.06147	6.770026042	36976369192	9.792170583	36.42730379	2.084101063
2001Q4	16.32908	6.923098959	37497227395	8.72681656	35.83430122	2.024985846
2002Q1	17.27385	7.439348959	38530778591	12.36475831	34.23508161	1.963751699
2002Q2	17.00719	7.688776042	38906067151	11.65806146	33.77783157	1.913161973
2002Q3	16.316	7.933880209	39110991254	10.37669865	33.56747334	1.867898606
2002Q4	15.2003	8.174661459	39145550900	8.5206699	33.60400692	1.827961598
2003Q1	10.61837	8.923619792	37827258145	2.994124131	34.74899487	1.789281755
2003Q2	9.870306	8.950755208	37994084053	1.22710391	34.93468707	1.761625141
2003Q3	9.914411	8.768567708	38463540681	0.123758169	35.02264606	1.740922563
2003Q4	10.75068	8.377057292	39235628029	-0.315913093	35.01287185	1.727174021
2004Q1	14.90416	6.89484375	41360919751	1.140895388	34.36883229	1.72596534
2004Q2	16.31474	6.437239584	42318039078	1.53545098	34.37820453	1.723890541
2004Q3	17.50746	6.122864584	43157559664	2.100558945	34.50445642	1.726535447

2004Q4	18.48233	5.95171875	43879481508	2.836219283	34.74758796	1.73390006
2005Q1	19.05472	6.2553125	44171542888	4.150045697	35.47250366	1.754757087
2005Q2	19.66772	6.238020833	44783171940	5.063765303	35.80343271	1.768052028
2005Q3	20.13672	6.231354167	45402106940	5.984991802	36.10527962	1.782557593
2005Q4	20.46171	6.2353125	46028347889	6.913725194	36.37804438	1.79827378
2006Q1	20.10541	6.090520833	45803072484	8.489540646	36.51349611	1.822227379
2006Q2	20.3573	6.179479166	46787454251	9.177457758	36.77138893	1.837554097
2006Q3	20.6801	6.3428125	48122670887	9.617051697	37.04349196	1.851280723
2006Q4	21.07382	6.580520833	49808722393	9.808322462	37.3298052	1.863407256
2007Q1	21.77523	7.142734375	53504954423	8.373144325	38.02076603	1.874103302
2007Q2	22.21605	7.429140625	55228937405	8.619019036	38.17932474	1.882961809
2007Q3	22.63306	7.689869792	56640016994	9.167820864	38.19591871	1.890152382
2007Q4	23.02627	7.924921875	57738193190	10.01954981	38.07054794	1.895675021
2008Q1	25.18271	8.535729167	58476586409	14.15604508	35.03994988	1.901791975
2008Q2	24.8135	8.558854167	58967707653	14.42089258	35.73595465	1.903073846
2008Q3	23.70567	8.395729167	59164677338	13.79593152	37.3952997	1.901782884
2008Q4	21.85922	8.046354167	59067495463	12.2811619	40.01798503	1.897919087
2009Q1	15.77578	6.904869792	57533915469	6.540163131	46.53201072	1.889466873
2009Q2	13.85145	6.425338542	57305329100	4.58034462	49.91017658	1.881263642
2009Q3	12.58785	6.001901042	57239489795	3.06528578	53.08048268	1.87129381
2009Q4	11.98499	5.634557292	57336397556	1.994986613	56.04292902	1.859557378
2010Q1	13.85821	5.380598959	57651728856	1.254047792	59.80362995	1.841623764
2010Q2	13.85067	5.102526042	58051860157	1.119427698	61.94791105	1.828126363
2010Q3	13.77772	4.857630209	58592467934	1.475727006	63.48188666	1.814634595
2010Q4	13.63937	4.645911459	59273552185	2.322945716	64.40555678	1.801148459
2011Q1	12.80827	4.450247396	60523717400	5.155103508	64.22254846	1.770826712
2011Q2	12.79004	4.311731771	61314312808	6.38655315	64.12415677	1.764088338
2011Q3	12.95734	4.213242187	62073942896	7.511314322	63.61400877	1.764092093
2011Q4	13.31018	4.154778646	62802607664	8.529387024	62.69210445	1.770837977
2012Q1	13.84855	4.136341146	63500307113	9.440771256	61.35844382	1.78432599

2012Q2	14.57245	4.157929687	64167041242	10.24546702	59.61302688	1.804556133
2012Q3	15.48188	4.219544271	64802810052	10.94347431	57.45585363	1.831528405
2012Q4	16.57684	4.321184896	65407613541	11.53479313	54.88692406	1.865242807

Sources: Bank of Namibia Annual Reports and Namibia Statistics Agency

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