**SUBJECTIVE WELL BEING AND FISCAL POLICY, A CAUSAL ANALYSIS OF ZIMBABWE (1980 to 2020).**

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# *ABSTARCT*

***Purpose:*** The purpose of this study was to investigate the causal relationship between fiscal policy and subjective well-being for the Zimbabwean economy from 1980 to 2020.

***Methodology:*** The study adopted the Vector Auto Regressive Model to characterise the relationship between subjective well-being and fiscal policy. In addition, the cointegration technique was used to establish the long run relationship between fiscal policy and subjective well-being. The Granger causality test was conducted to ascertain the direction of causality between the variables.

***Findings:*** The study results show that the variation on subjective well-being from taxation is greater than the variation from government expenditure. In addition, the study findings show that there is a long run relationship between fiscal policy and subjective well-being. The major finding of the study is that fiscal policy granger causes subjective well-being.

***Practical implication:***The government of Zimbabwe should prioritisation of government expenditure in order to effectively deliver public goods, revisiting the progressivity of the taxation in order to have a positive influence of taxes on subjective well-being and construction of Gross National Happiness Index which informs fiscal policy makers on the level of subjective well-being after policy changes have been made.

***Novelty:*** The study analysed the relationship between fiscal policy and subjective well-being where few studies have been conducted to analyse the relationship between the variables. In addition according to the scholar`s knowledge the study is the first the causal relationship between fiscal policy and subjective well-being at macro-level for the Zimbabwean economy.

***Key words:*** Subjective well-being, happiness, VAR, Cointegration, Granger Causality.

# 1. INTRODUCTION AND BACKGROUND

Fiscal policy is regarded as one of the most significant economic policies pursued by economic policymakers globally (Barnes & Hicks, 2018). The relevance of fiscal policy is best understood in terms of its fundamental tasks, which include allocation and redistribution of resources in an economy (Dumičić, 2019). Fiscal policy is described in terms of the amount and structure of government expenditure and the level and composition of taxes (Veselinović et al., 2019). Thus fiscal policy contains two important components which are government expenditure and taxation. Government expenditure is defined as spending on assets and objects used by the government to provide public goods or services (Prasetyo, 2020). The dominant assumption in macroeconomics is that government spending is unproductive and pointless as it does not influence economic outcomes (Daniel & Gao, 2015). Another component of fiscal policy that is used to enhance economic outcomes is taxation. A tax is a mandatory financial charge or levy imposed on a taxpayer by a government entity to finance government spending and related public expenditures (Motta & Rossi, 2019). Taxation is used mainly to collect income for government spending, however it may serve other reasons as well such as reducing poverty and income inequality (Sudarno et al., 2021). As a critical instrument used by the government to achieve set macroeconomic objectives, the fiscal policy has a significant influence on the well-being of the citizens through its redistributive effects (Jouini et al., 2018). The Agenda 2030 places a premium on government interventions and policies which improves the subjective well-being and happiness of the citizens (Ruiz-Mallén & Heras, 2020).

The first and legitimate goal of public policy and govrnance is the protection of human life and happiness (Woo, 2018). Consequently, one of the primary responsibilities of government is to promote happiness by the means available in each nation (Woo, 2018). Thomas Jefferson (1809) underlined that caring for human life and pleasure is the sole reasonable goal of decent governance (Morris, 2018). As Aristotle and Ibn Khaldun stated, one of the most essential duties of government is to promote happiness using the means that nations possess (Kasmaoui & Bourhaba, 2017). The primary objective of social science should be to determine what contributes to and detracts from happiness (Joshanloo, 2017). In the past, happiness was mostly researched by philosophers and psychologists, but in recent years, it has also become an important concept in economics (Koch, 2018). Traditionally, economics has considered happiness in terms of subjective well-being (Wong et al., 2020). Happiness uses reported subjective well-being as a proxy for usefulness of a policy from an economic standpoint (Joshanloo, 2017). For the purpose of this research, subjective well-being and happiness are used interchangeably since they are all measures of utility.

Subjective well-being is the extent to which a person believes or feels that his or her life is going well (Helliwell & BarringtonLeigh, 2010). Subjective well-being assessments differ from objective well-being indicators such as GDP in that they are based on self-reports of respondents' lives (Layard, 2010). Whether fiscal policy can live up to its normative promises of improving the well-being of the citizens remains a matter of controversy (Kwon, 2020). Government is the only economic actor capable of providing public goods and therefore, it may be claimed that government intervention in economic activity has both beneficial and negative effects (Boyce et al., 2018). This will finally reflect in the subjective well-being or contentment of the population (Boyce et al., 2018). There have been debates over the years on whether fiscal policy has an impact on the subjective well-being of the citizens (Altman et al., 2017). Furthermore there is no agreement on the nature of the relationship between fiscal policy components and subjective well-being (Eklou & Fall, 2020).

At least theoretically, significant percentages of public expenditures in industrialised countries are devoted to social services and redistribution in favour of the relatively poor (Rizkallah, 2021). It is often considered that the resulting increased tax burden falls mostly on high-income individuals, particularly through progressive income and wealth taxes (Eklou & Fall, 2020). Consequently, based on this effect alone, one would assume that the lower end of the income distribution would gain more from high government expenditure and taxation than the upper end (Eklou & Fall, 2020). This does not necessarily imply that the wealthy collectively lose from a big government. If government spending efficiently reduces income gap, redistribution might also increase the life satisfaction of high-income earners, who dislike economic inequality for several reasons. In a cross-section of 74 countries, Bjrnskov et al. (2007) demonstrate that national averages of life satisfaction decrease as government expenditures and taxation rise.

Despite the lack of consensus among economist, fiscal instruments, public expenditure and taxation, may be one of the government's most significant tools for influencing market-based happiness (Delgado-Rodríguez & De Lucas-Santos, 2021). Few economists have researched the relationship between fiscal policy and happiness or subjective well-being (Rizkallah, 2021). This study aims to determine the causal relationship between fiscal policy and happiness or subjective well-being in the Zimbabwean economy. Zimbabwe has implemented various economic interventionist programmes throughout the years. After Zimbabwe's independence in 1980, the new government invested heavily on infrastructure development, including roads, schools, and hospitals (Mukwepa, 2019). This was intended to remedy the absence of these basic amenities for the majority of Zimbabwe, since the bulk of these services had previously been provided to the white minority. In 1984, total expenditures reached 42% of total revenue (Dlamini & Schutte, 2020). During the first decade of post-independence, the average budget deficit was 7.4% as government expenditure exceeded revenue. As a consequence of pressure from the Bretton Woods institutions IMF and World Bank, the Zimbabwean government initiated the Economic Structural Adjustment Program (ESAP) in 1991 (Zhou & Zvoushe, 2017). Under ESAP, several state firms were privatised and trade was liberalised, with the aim of bringing the budget deficit and inflation rate down to single digit and the budget deficit was projected to reach 5% of GDP by 1994/1995 (Hadebe, 2022). The period between 1996 and 2008 was marked by economic challenges which resulted in dips in taxation as expenditure increased (Nyabereka, 2017). Between the period 2009 and 2018 under the multi-currency system, the fiscal imbalances began to stabilise although they began to increase towards 2018 (Mbanyele, 2019).

In 2018, the Zimbabwean economy was marked by persistent fiscal imbalances, vulnerabilities in the banking sector, and cash shortages. Since 2013, the government of Zimbabwe has had fiscal deficits as high as 12.9% of GDP in 2017, up from 1.3% in 2013 (Kavila, 2022). Through a combination of fiscal reduction and broadening the revenue base, the Zimbabwean economy was able to convert these chronic deficits into surpluses in 2019 and 2020, so laying the groundwork for budgetary stability (Kavila, 2022). Despite the macroeconomic stability that has been achieved over the years, similar to other African countries, there are low levels of happiness. Zimbabwe scored 144 out of 146 nations on the World Happiness Report in terms of happiness (AllAfrica Global, 2022). The data from Country Economy (2022) shows that happiness index for Zimbabwe has declined from 4.827 in 2013 to 2.995 in 2022. Therefore a downward trend has been recorded in Zimbabwe over the years. Zimbabwe's average score throughout that time was 3.88 points, with a minimum score of 3 in 2021 and a top score of 4.83 in 2013 (Global Economy, 2022). In the presence of fiscal stability happiness has declined. The study aimed to close the gap caused by the dearth of research examining the causal connection between fiscal policy and happiness. The purpose of the study is given as question as follows:

* What is the causal link between subjective well-being and fiscal policy?

# 2. LITERATURE REVIEW

There are various theories that have been developed to describe subjective well-being and fiscal policy. In addition, this section presents the empirical studies that have been conducted on subjective well-being and fiscal policy.

## 2.1 Concept of subjective well-being

Subjective well-being refers to the degree to which an individual thinks or feels that his or her life is proceeding smoothly (Clapham et al., 2018). Subjective well-being researchers are interested in self-reported assessments of the quality of a person's life. There is a tendency to associate subjective well-being with larger types of well-being, and there are several theories of well-being that are objective in character (Liang et al., 2020). Subjective well-being should be seen as the aspect or particular form of well-being that reflects how individuals assess their own lives. Subjective well-being has been described by economists as a measure of utility. Historically, economists have used objective indicators, most notably GDP, to evaluate the prosperity of a nation (Clapham et al., 2018). The previous idea that a country's wealth is the greatest measure of its quality of life was refuted in 1974 by Richard Easterlin's research (Clark, 2016). In what is now known as the Easterlin paradox, the study revealed that while there is a positive correlation between national income and happiness, total levels of happiness do not improve even when national wealth grows through time, indicating that other variables must be at play (David & Ayers, 2013). Since then, more emphasis and study in economics have been placed on the characteristics that best predict country-level subjective well-being in order to better precisely evaluate quality of life within and across nations and to guide policymakers' decisions (Stelzner, 2022). However, the Easterlin paradox also led to the notion that long run relationships between subjective well-being and other economic variables are non-existent (Slag et al., 2019).

## 2.2 Theories of subjective well-being

Traditionally, academic research on SWB and contentment has been grounded in psychological and sociological theory (Helliwell & BarringtonLeigh, 2010). Various theories have been developed over the years to explain the concept of subjective well-being. One the psychological theory of subjective well-being is the livability theory. According to the livability theory, a person's happiness relies on how well their material and nonmaterial requirements are met (Mouratidis, 2020). Livability theory is based on the essential assumption that hedonic experience influences the degree to which we enjoy our lives (happiness) (Bălțătescu, 2021). Therefore, subjective well-being relies on avoidance of pain. Another assumption is that need satisfaction is contingent upon both external living situations and an individual's capacity to use them (Majeed & Mumtaz, 2017). Consequently, poor living circumstances will diminish happiness, especially when their demands surpass human capacities (Majeed & Mumtaz, 2017). Individuals evaluate their subjective well-being based on absolute criteria the extent to which universal human needs is satisfied (Mohrekesh et al., 2019). Thus absolute variables such as income, unemployment and education among others have an influence on the subjective well-being of the society.

Conversely, the comparison theory highlights that happiness is the outcome of comparing idealised conceptions of life with reality. According to comparison theory, happiness is defined by comparing current life to the past and to the experiences of others (Liao, 2021). People establish their degrees of enjoyment by continually comparing and evaluating their experiences in relation to those of others (Chae, 2018). Hedonic theory underpins comparison theory, according to which individuals calculate their life happiness by comparing their suffering to their joys (Stets & Trettevik, 2016). The bigger the disparity between one's desires and possessions, the less happiness one is (Chae, 2018). Happiness, according to the comparison theory is characterised as a construct that reflects an individual's subjective reality in an objective universe and is mostly controlled by comparison thought (Stavrova, 2019). It has two components: intellect and emotion. In other words, people's evaluations of their lives are composed in part of their mood or emotions (affect) and in part of their cognitive processes, such as comparison assessment (cognition) (Stets & Trettevik, 2016).

If comparison theory is accurate, then government efforts to enhance subjective are futile, since residents will just adapt to the new level and be no happier. In contrast, if the livability argument is accurate, fiscal policy components policy components have a significant impact on subjective well-being. However, other scholars argue that subjective well-being has economic theory foundations. According to Dao (2017) and public choice theory and the new classical school perspectives elucidate the role of government in promoting happiness or subjective well-being. A larger government increases the likelihood of more government failures, which is detrimental to the general welfare (Larkin Jr, 2016). According to the public choice theory, politicians, government employees, bureaucrats, and other stakeholders may prioritise their own interests when formulating and executing policies that result in unneeded interventions, increased government expenditure, and taxation which leads to poor welfare (Dao, 2017). As for the new classic school, it stresses the role of the government in overcoming market failures by enabling and sustaining the institutions essential for the market and transactions to work and by acting to remedy external causes resulting in improved welfare (Rizkallah, 2021). Thus the role of the government based on classical school is to enhance subjective well-being.

## 2.3 Empirical link between subjective well-being and fiscal policy

Empirical studies have been conducted on the relationship between fiscal policy components and subjective well-being/happiness. Li et al. (2022) examined whether a relationship exist between environmental performance, government expenditure and well-being from secondary data from Chinese Family Panel Survey and macroeconomic statistics. The study applied multi-level regression and the study results showed that good environmental performance affects how government expenditure influences well-being. Kwon (2021) examined the effect of defence spending on subjective well-being based on panel data collected from developed and developing countries. The results of the Ordinary Least Squares Method and Ordered Probit models showed that Defence spending negatively influences well-being up. Rikzallah (2021) evaluated how fiscal policy (taxes and expenditure) is related to subjective well-being appliying the Pooled OLS, Random Effects and Fixed Effects models which were based on the Barro model of endogeneity. The study finding showed that Government expenditure does not have an influence on subjective well-being.

Kwon (2020) analysed the relationship between fiscal policy components, transparency and individual well-being using panel data. The findings show that different types of expenditures and taxes have different impact on well-being. Mazzanti et al. (2020) based on panel regression found a positive relationship between government expenditure and well-being whilst no relationship was established between taxes and subjective well-being. The research by Oishi et al. (2012) using cross-sectional data and panel regression from 54 showed that Rawls' idea that a decent society redistributes its resources so that all individuals have the same possibilities for future success via equitable access to public goods, such as excellent education and health care, holds true. Furthermore, the findings demonstrated that progressive taxes are positively associated with the subjective well-being of nations, and that people who reside in countries with more progressive taxes have a higher quality of life than those who reside in countries with less progressive taxation. Bjrnskov et al. (2007) employed panel regression for developing countries and the findings demonstrated that national averages of happiness decrease as government expenditures and taxation rise.

Based on the analysis of the review literature, the majority of the studies have examined the relationship between fiscal policy and subjective well-being have treated subjective well-being as a dependent variable. Therefore the gap lies on the methodology. However, Diener et al. (2018) indicated that subjective well-being has an impact on the economic variables. Generally, research on the relationship between fiscal policy and SWB is inspired by the intuitive lay hypothesis that higher levels of government spending and lower tax rates result in greater levels of happiness. In other words, the presumed path of causality runs from fiscal policy to subjective well-being. The Granger Causality test can be applied to show whether subjective well-being has an effect on government expenditure and taxation in the Zimbabwean economy.

# 3. Research methodology

The research methodology shows the techniques that are applied in order to achieve the study objectives and conclude an empirical study. The area of subjective well-being is relatively new and there are various methodologies have implemented over the years.

## 3.1 Data

The objective of every study is to collect in-depth data that enhances the quality and credibility of the study. The data collected for the study should be sourced from credible institutions. The study utilised time series collected from the World Bank statistics and the United Nations. Time series data is a collection of observations (behaviour) for a single subject (thing) at multiple time intervals (usually uniformly spaced as in the case of metrics, or unequally spaced as in the case of events (Wauchope et al., 2021). The study collects the data for three variables which are

*Subjective well-being (SB):* The reliability and validity of SWB measures has been a primary focus of SWB research over the last several decades (Pavot et al., 2018). Recent attention has increased in the subject of how to go beyond income-based metrics of wellbeing and towards multidimensional well-being measurement including Human Development Index (Pavot et al., 2018). Subjective well-being is represented by the Human Development Index (HDI) in this study. On a practical level, the HDI is perhaps the most prominent measure of subjective well-being, used frequently in policy and research and encouraging a profusion of other measures using similar aggregation approaches (Yang, 2018). The study utilised times series data from the United Nations World Human Index from 1980 to 2020.

*Taxation (Tax):* One of the most important aspects of the fiscal policy is the government revenue. Many developing countries including Zimbabwe heavily rely on tax as the main source of government revenue (Ali et al., 2017). In order to have the full policy recommendations, a study should consider aggregate tax revenues in the economy (Kwon, 2020). The study utilised tax revenue as a percentage of the GDP collected from 1980 to 2020 from the World Bank database.

*Expenditure (EX):* Government expenditure reflects the ability of the government to provide essential services which improves subjective well-being (Dao, 2017). As the benevolent social planner, governments improve subjective well-being through various forms of expenditure mainly in social welfare, health and education. All forms of government expenditure directly and indirectly have an effect on subjective well-being (Li et al., 2022). Therefore based on the assertion by () total government expenditure expressed as a percentage of the GDP was utilised in the study.

## 3.2 Model specification

The study of subjective well-being allows for studies to utilise various econometric methodologies. In addition to New Keynesian DSGE models, VAR models have been the most prominent method for analysing the consequences of government policy and several stylized findings have been uncovered (Roy & Sharma, 2021). Vector auto-regression (VAR) is a stochastic process model used to represent the linear interdependencies between several time series (Davis et al., 2016). In applied economics, endogeneity between dependent and independent variables presents challenges hence VAR circumvents the challenge (Davis et al., 2016). There are two opposing theories on the relationship between government expenditure and taxation (Gadenne, 2017). The tax and spend approach highlights that government expenditure is determined by taxation whilst spend and tax paradigm indicates that taxation is determined by government expenditure (Gadenne, 2017). The two theories highlight the likelihood of endogeneity between the variables. Regarding VAR estimation, there are two choices where a large number of variables that may have significant economic interactions (but with fewer degrees of freedom) are included in the study or utilisation of fewer but more significant variables enabling more efficient estimation through having more degrees of freedom (Tiwari, 2015). This research will use a three-variable VAR model to estimate and analyse the relationship between subjective well-being and fiscal policy to allow for efficient estimation. The study adopts the VAR model as used by Tiwari as follows:

$Tax\_{t }$ = $k\_{1 }$- $a\_{12 }EX\_{t }$ - $a\_{12 }LS\_{t }$+$ β\_{11 }Tax\_{t-1 }$+ $β\_{12 }EX\_{t-1 }+$ $ $ $ β\_{13 }SB\_{t-1 }+$ $ ε\_{t}^{Tax}$

$EX\_{t }$ = $k\_{2 }$- $a\_{21 }Tax\_{t }$ - $a\_{23 }SB\_{t }$+$ β\_{21 }Tax\_{t-1 }$+ $β\_{22 }EX\_{t-1 }+$ $ $ $ β\_{23 }SB\_{t-1 }+$ $ ε\_{t}^{EX}$

$SB\_{t }$ = $k\_{3 }$- $a\_{31 }Tax\_{t }$ - $a\_{32 }EX\_{t }$+$ β\_{31 }Tax$+ $β\_{32 }EX\_{t-1 }+$ $ $ $ β\_{33 }SB\_{t-1 }+$ $ ε\_{t}^{SB}$

The VAR model estimates the impulse response function and the variance decomposition. In the process of evaluating time series and developing standard regression models, econometricians/researchers have often disregarded the inherent dynamic properties of most time series (Tanaka, 2017). Magazino (2012) showed that modern researches no longer apply ordinary least squares methods as many economic variables are non-stationary and violate its assumptions. Modern studies are now applying cointegration and Granger Causality methods so as to circumvent the challenge posed by the presence of unit roots in the economic variables (Chontanawat, 2020). Therefore the study applies the Granger Causality and cointegration techniques.

Cointegration denotes that variables move together in the long run despite the possibility of short-term divergence (Gujarati, 2008). Variables are deemed cointegrated if they are integrated to different orders, but the residual or linear connection between them is stationary at levels (Gujarati, 2004). Common cointegration tests include the Pedroni test, the Johansen test, and the Auto Regressive Distributed Lag (ARDL) test (Paparas & Stoian, 2016). ARDL and Johansen cointegration approaches use distinct estimate techniques (Gujarati, 2008). The Johansen cointegration approach utilises maximum likelihood, while the ARDL cointegration procedure uses the method of ordinary least squares (Nkoro & Uko, 2016). The cointegration test is based on eigen values and trace statistics and is considered to be closer to theory than other techniques (Olorogun, 2021). The study specifies the Johansen cointegration test as used by Olorogun (2021) as follows:

$Y\_{t }$=$ μ\_{ }\_{ }$+$A\_{1 }Y\_{t-1 }$…+$A\_{p }Y\_{t-p }+ε\_{t }$

Where t= 1, 2…….T $ε\_{t }≈$idd (0,$ σ^{2}$)

The lag length is reflected by p. The cointegration condition is that $A<1$ so that the model is dynamically stable. Therefore the long run relations between the variables exist when the condition is satisfied. However Gujarati (2008) noted that correlation does not imply causality. Cointegration shows the presence of a long run relationship between the variables but it does not show which variables causes the other and therefore the Granger causality technique should be performed. Instead, subjective well-being is considered as a potentially significant effect on economic factors hence the application of the Granger Causality method (Diener et al., 2018). In line with the assertion by Diener et al. (2018)) the study adopts the Granger Causality method to ascertain the direction of causality between subjective well-being and fiscal policy. The study utilises the Granger causality method as specified by Gujarati (2008) as follows:

$SWB\_{t }$ =σ Σ$SWB\_{t-1 }$ + $θTax\_{t-1 }+$ $βExp\_{t-1 }+ ε\_{t }$

$Tax\_{t }$ =σ Σ$Tax\_{t-1 }$ + $θSWB\_{t-1 }+$ $βExp\_{t-1 }+ ε\_{t }$

$Exp\_{t }$ =σ Σ$Exp\_{t-1 }$ + $θTax\_{t-1 }+$ $βSWB\_{t-1 }+ ε\_{t }$

The Granger causality test identifies three possible kinds of correlations between variables: independent, bi-directional, and unidirectional (Troster, 2018). Variables are deemed independent when the Granger Causality test determines that no model variable has an influence on the other variables (Gujarati, 2004). When variables have an effect on one another, a bidirectional connection is developed (Gujarati, 2004). A unidirectional connection exists when one variable has an influence on another variable, but the second variable has no effect on the first variable (Troster, 2018).

## 3.3 Diagnostic tests

To get precise estimates, it is required to undertake diagnostic tests that identify the existence of econometric issues (Oktayer & Oktayer, 2013). In executing the Granger Causality test, the unit root test normality test, multi-collinearity and optimum lag length determination are carried out. The unit root test is used to determine whether or not a variable is stationary (Creswell, 2009). The existence of unit roots impacts the precision of the coefficients and the reliability of the study's findings (Oktayer & Oktayer, 2013). The unit root test is performed to determine the order of integration of a model's variables (Gujarati, 2004). The ADF Fisher unit root test is used to assess if the variables contain unit roots. The lag length has a significant impact on the Granger causality test. Akaike Information Criterion (AIC) and the Schwarz (Bayesian) Information Criterion (SIC) are often used to identify the ideal lag duration in a model (Dzingirai & Tambudzai, 2014). The SIC is appropriate for small samples with less than 30 observations, but the AIC is used for big samples with more than 30 observations (Dzingirai and Tambudzai, 2014). Due to its large sample size, the AIC is regarded as an impartial estimator for determining the ideal lag duration (Portet, 2020). Therefore, the AIC is used to determine the appropriate lag time in this research.

# 4. STUDY FINDINGS AND DISCUSSION

This section presents and discusses the findings of the study based on the research techniques presented in the previous section. Descriptive statistics are essential because they show the characteristics of the study's variables. The descriptive statistics are presented in Table 1 below.

**Table 1: Descriptive statistics**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **TAX** | **SB** | **EX** |
|  Mean | 18.80341 | 0.47756 | 16.80201 |
|  Median | 18.5 | 0.467 | 17.92352 |
|  Maximum | 35.4 | 0.571 | 27.48708 |
|  Minimum | 2.9 | 0.411 | 2.047121 |
|  Std. Dev. | 6.46066 | 0.04924 | 5.462251 |
|  Skewness | -0.225012 | 0.49542 | -1.02399 |
|  Kurtosis | 4.112981 | 2.11258 | 4.007175 |

According to Gujarati (2008), the normal value for skewness is 0 and values around the normal value are seen as good. Table 1 shows that fiscal policy components taxation and government expenditure are negatively skewed whilst subjective well-being is positive skewed. Leptokurtic variables are those whose kurtosis value is higher than 3 (Gujarati, 2004). Some observations of a variable are characterised as leptokurtic if they deviate from the mean by more than three standard deviations. The descriptive statistics in Table 1 shows that Taxation and Government Expenditure a lyportokurtic whilst Subjective well-being is playtkurtic. Leptokurtic may signify that variables may have unit roots and are non-stationary (Gujarati, 2008). Table 2 below contains the unit root test results

**Table 2: ADF Unit root test results**

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | ADF Fisher statistic | Probability Value | Integration Order |
| Government expenditure (EX) | -6.722708 | 0.0000 | I(1) |
| Subjective well-being (SB) | -2.478284 | 0.0146 | I(1) |
| Taxation (Tax) | -6.400928 | 0.000 | I(1) |

Akaike Information Criterion (Lag 2: 5.539508\*)

Table 2 shows that all the variables contain a unit root and are integrated of order 1. The presence of unit roots precludes the use of the usual least squares approach (Magazzino, 2012). The cointegration and Granger Causality approaches are applicable. The Granger Causality test is heavily dependent on the on the lag length. The Akaike Information Criterion shows that the optimal lag length for the model is 2. The correlation matrix showed the model does not suffer from multi–collinearity hence the residuals follow a nomal distribution. The impulse response function was performed and Table 3 shows the Impulse response function for subjective well-being.

Table 3: Impulse response functions

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Period | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| TAX | -0.0008 | -0.001 | -0.0047 | -0.0095 | -0.0133 | -0.0158 | -0.0171 | -0.0176 | -0.0176 | -0.0174 |
| SB | 0.00953 | 0.01325 | 0.01448 | 0.01465 | 0.01443 | 0.01406 | 0.01363 | 0.01317 | 0.01272 | 0.01228 |
| EX | 0.0000 | 0.0002 | -0.0015 | -0.0034 | -0.0049 | -0.0060 | -0.0066 | -0.0069 | -0.0070 | -0.0069 |

Table 3 shows that a 1% change in taxation results in a negative response to the subjective well-being by 0.008%and 0.0174% in periods 1 and 10, respectively. Therefore, it shows that over time the subjective well-being response to taxation increases negatively. In addition the response of subjective well-being to government expenditure changes from positive to negative over time. The study findings are aligned to the assertion by Bjrnskov et al. (2007) which demonstrated that national averages of happiness decrease as government expenditures and taxation rise. The study findings support the comparison theory which shows that changes in conditions are the determinants of subjective as well as the public choice theory which indicates that government intervention may have negative impact on well-being. Different levels of taxation and government expenditure have a different impact on happiness and thus different levels of subjective well are recorded (Kwon, 2021). The variations in subjective well-being has important policy implication hence Table 4 below shows the variance decomposition for subjective well-being

**Table 4: Variance decomposition**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Period | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| S.E. | 0.00957 | 0.01638 | 0.02241 | 0.0286 | 0.03504 | 0.04136 | 0.04723 | 0.05254 | 0.05727 | 0.06148 |
| TAX | 0.77556 | 0.62375 | 4.75718 | 13.8625 | 23.7154 | 31.6121 | 37.2992 | 41.3191 | 44.2041 | 46.3253 |
| SB | 99.2244 | 99.3585 | 94.7968 | 84.4658 | 73.2138 | 64.1114 | 57.4778 | 52.7375 | 49.3087 | 46.7754 |
| EX | 0.000 | 0.01778 | 0.44603 | 1.67175 | 3.07088 | 4.27652 | 5.22298 | 5.9434 | 6.4872 | 6.89929 |

Table 4 shows that not more than 46.33% and 6.9% of the variations in subjective well-being emanate from taxation and government expenditure respectively. The variation in subjective well-being emanating from both taxation and government expenditure increases over time. However, taxation results in more variation in subjective well-being compared to government expenditure. This is in line with the finding by Rikzallah (2021) which showed that taxation has more impact on subjective well-being compared to government expenditure. The study findings may be is premised on the assumption that generally people do not want lose and place a premium on personal loses than gains in line with the hedonic experience assumed in the livability theory (Bălțătescu, 2021). Taxes show the transfer of income from and disutility to economic agents to government which may represent loss of income to other stakeholders hence explaining the prevalence of tax evasion and tax avoidance (Lawsky, 2010). Government expenditure on the other side represent the availing of resources which a gain hence not as valued as loss incurred through taxes (Lawsky, 2010). Variance decomposition does not show the long run link hence the cointegration is used to reflect the long run relationship between variables. Table 5 below shows the cointegration test results for the study.

**Table 5: Cointegration test results**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.\*\* |
| None \* | 0.315356 | 25.36296 | 24.27596 | 0.0364 |
| At most 1 | 0.235032 | 10.96645 | 12.3209 | 0.0834 |
| At most 2 | 0.020458 | 0.785465 | 4.129906 | 0.4323 |

Given the findings provided, the null hypothesis of no cointegrating equation is rejected at the 5% level. Hence, the study findings in Table 5 show that a long-run link exist among the three variables. From a policy level, it shows that the fiscal decisions have a long run impact on subjective well-being. This contradicts the notion by Slag et al. (2019) that a long run relationship between subjective well-being and economic variables is non-existent. The cointegration results show that fiscal policy should take into account subjective well-being as there is a long run relationship. However, studies need to be extended beyond cointegration to Granger causality which shows the direction of influence between variables.

**Table 6: Granger causality test results**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Direction of causality | Lags | F-Statistic | Probability |
| Government expenditure | EX to SB | 2 | 4.00268 | 0.0275 |
| SB to EX | 2 | 0.151 | 0.8604 |
| Taxation  | SB to Tax | 2 | 0.09022 | 0.914 |
| Tax to SB | 2 | 4.45264 | 0.0192 |

The study results from Table 6 show that there is uni-directional relationship between fiscal policy components and subjective well-being. The study findings show that both taxation and government expenditure granger causes subjective well-being. Thus the direction of causality flows from fiscal policy to subjective well-being. The study finding reject the notion by Diener et al (2018) that highlights that subjective well-being is a causal of economic outcomes. The findings support the earlier empirical studies which viewed subjective well-being as dependent on other economic variables. In addition, the study findings support the classical school theory which posits that government interventions enhance well-being of the society. Therefore, the study findings imply that fiscal interventions should be directed towards increasing the subjective well-being of the citizens.

# 5. CONCLUSION

Although fiscal policy plays a significant role in promoting economic well-being, the link between the two has gotten little attention. The emphasis of the literature is economic development, and the objective of every country's policy is to promote citizen happiness. The study investigated the causal relationship between subjective well-being and fiscal policy for the Zimbabwean economy. The study followed the VAR model where all the variables were assumed to be endogenous. The VAR model was adopted to circumvent the endogeniety challenge as the components of fiscal policy do not operate in isolation but rather in concert with one another, where public expenditures are naturally funded by taxation and taxation is subject to the government's desired level of spending. One of the study limitations was the unavailability of subjective well-being data. The challenge was circumvented through the use of HDI although some scholars debate on its applicability as a measure of subjective well-being.

The major study finding is that there is uni-directional relationship between subjective well-being and fiscal policy. The study findings show that taxation and government expenditure granger causes subjective well-being confirming the applicability of the livability theory. In addition, the cointegration results show the presence of the long run relationship between fiscal policy and subjective well-being. The impulse response function showed that the response of subjective well-being to government changes from positive to negative over time in line with the comparison theory whilst the response of subjective well-being is negative. The variance decomposition shows the variation in subjective well-being emanating from taxation is greater than the variations from government expenditure in line with the hedonic experience assumption of the livability theory.

As shown, subjective well-being is influenced by fiscal policy and therefore the government should concentrate on identifying the fiscal policy elements that improve subjective well-being. Based on the study finding, the study recommends prioritisation of government expenditure in order to effectively deliver public goods and increase subjective well-being. The study also recommends revisiting the progressivity of the taxation in order to have a positive influence of taxes on subjective well-being. Using a variety of measurements and comparing their findings to understand the drivers of happiness, more effort should be devoted to researching economic happiness. The study recommends the construction of Gross National Happiness Index which informs fiscal policy makers on the level of subjective well-being after policy changes have been made.

Although the study was thorough, it did not cover all the areas on the relationship between subjective well-being and fiscal policy hence makes suggestions for future studies. The study suggest a comparative study to be conducted where two or more economies can be studied and results compared in order to comprehensively make conclusions and inferences about the relationship between the variables. In addition, the study suggests disaggregating of taxes and government expenditure so as to analyse the effect of each tax and expenditure component on subjective well-being. The study concludes that the government should effectively utilise fiscal policy to improve subjective well-being which is the first and legitimate goal of public policy.

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