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# Financialization and Economic Growth Nexus in South Africa

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**Abstract**

*We empirically investigate the effects of financialization on economic growth in South Africa. The country experienced increases in the share of the financial sector since the democratic dispensation. This country is also one of the few developing countries with a large financial market. The sample period includes a long-run horizon from 1994 to 2021. The study applies quantile regression methodology which we use to explain the effects of financialization at different levels of economic growth. We estimate the effects of financialization at the 25th, 50th, 75th percentile of economic growth. The key measure of financialization is the finance gross value added and the measure of economic growth is the gross domestic product. We find that financialization has a significantly high and positive effect only at all the levels of economic growth. From the different percentiles, financialization contributes more to higher levels of economic growth.*

**Keywords:** *Financialization; Economic Growth; Quantile Regression; South Africa.*

**JEL Classification:** *F65, G18, G28.*

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## 1. Introduction

The main contribution of this study is to assess the transmission mechanisms of financialization to the macroeconomy of the South Africa. The term financialization has become familiar in recent years as the financial markets developed motives to influence private organizations and public institutions (Freeman, 2010). Financialization is the increase in the market share of the financial sector relative to other sectors in the overall economy (Perillo and Battiston, 2020). These financial motives have found their mainstream relevance by deepening facilitations in the economy. Since the democratic dispensation of 1994, South Africa has reformed its financial regulations which attracted various financial inflows from the international community. The rise of financialization in democratic and emerging economies has been termed "emerging finance capitalism" (Güngen, 2013). Domestic and foreign financial capital influences the decision making in government. South Africa is a debt-driven economy which have embraced financial neoliberalism and minimal government intervention. A large share of the financial sector to the rest of the economy means that the economy is more exposed to the financial sector (Fedderke, 2021).

Before 1994, financialization in the economy was focused on specific industries. A large proportion of financialization went into the mining industries (Southall, 1981). It was an extracted economy without democratic processes and markets were not inclusive. The country was under the governance of an apartheid organization. Sanctions of the apartheid government by international community led to the domestic hoarding of capital by the minority beneficiaries of the economy. The financial markets were highly concentrated. One major private firm owned more than 50 percent of all companies listed on the South African formal stock market. South Africa's largest industries were manufacturing, mining, finance, and wholesale. From 1960-1987, the finance industry had a lower market share of these four. From 2003-2021, the finance industry had the largest market share in the economy. The financial sector accounted for 10 percent of GDP in the 1960s, reached 22 percent of GDP in 2008, and 20 percent of GDP in 2020[1].

When the country adopted democracy in 1994, the country's financial sector was able to re-join the global financial system. A democratic constitution provided a financial environment for the capitalized persons to participate in offering financial services. There were few new market persons that were able to benefit

[1] Financial sector outlook study. Financial Sector Conduct Authority. https://www.fsca.co.za/Documents/FSCA%20Financial%20Sector%20Outlook%20Study%202022.pdf

from accessing large finance and purchasing of stocks that were being unbundled. This further increased economic inequality in an already highly unequal country in the world (Karwowski et al., 2018). The growth of South African economy has significantly dependent on exports of mineral resources in the 1970s and 1980s. The contribution of mining and manufacturing has gradually been playing a less significant role in recent years. Before year 2002, manufacturing was the leading sector since 1960 (Karwowski and Stockhammer, 2017).

Considering these historical developments, we apply a quantile regression model to investigate the effects of financialization at different levels of economic growth. The hypotheses of this empirical study can be categorized by the null hypothesis (H0), and the alternative hypothesis (H1). A variable can either be statistically significant or not based on the outcome of the probability value from the statistical results (Newey and McFadden, 1994). If the variable is significant, we can reject the null hypothesis and accept the alternative hypothesis as true. If the variable is not significant, we can reject the alternative hypothesis and accept the null hypothesis as true. The $H_0$ of the study is that *"financialization has no significant effect on economic growth"*. The $H_1$ of the study is that *"financialization has a significant effect on economic growth"*.

Section 1 presented an introduction that highlights the state of financialization and economic growth in South Africa. Section 2 presents the literature review which investigates the links between financialization and the macroeconomy. Section 3 presents the data collected. Section 4 presents the methodology which will be applied in the empirical work. Section 5 presents the findings of the study, and section 6 presents the conclusion.

## 2. Literature Review

According to Sawyer (2013) financialization is the increase in the market share of the financial sector relative to other sectors in the overall economy. It is acknowledged as a robust expansion of the financial markets, financial instruments, and financial services since the past 30 years. Palley (2013) defines financialization as "the process whereby financial markets, financial institutions, and the financially elites gain greater influence over economic policy and economic outcomes." These processes are wildly acceptable features of financialization by various scholars. The term "Financialization" as coined in the 1980s is in alignment with the rise of neoliberalism and globalization (Sawyer, 2013). This timing is viewed as the start of era of the continuity of financialization processes that has already began in earlier decades. Before the 1980s, examples

of previous processes of financialization are the growth in the volume of financial transactions, financial sector deregulations, securitizations (Levy, 2016).

Since 1994, the new political landscape and economic policies of South Africa supported privatization, competition, and efficient functioning of financial markets (Digby et al., 2006). The nation adopted a system where all persons are allowed to be exercise their human rights. The liberal project extended across social, economic, and political dimensions. The country's constitution has been dubbed one of the most progressive in the world (Jung and Shapiro,1995). It accommodates local and foreign persons and their legally acceptable activities. The enabling liberal environment created a financial market process that is links the domestic economy with international markets (Firer and Mcleod, 1999). Given the profitable investment projects, South Africa became the most financialized country in Africa through formal banking, fixed income securities, and the equity market (Firer and Staunton, 2002). Financial markets are directly connected to the institutions in the economy. An increasing share of the financial industry can influence politics in democratic countries. Democracy has the propensity to rapidly increase financialization (Krippner, 2005). The increase in financialization in a democratic country has important implications for the economics, politics, and social environments. Some scholars have found that a high reliance on the financial industry has increased household debt, income inequality, economic instability, financial instability, and produced low and stagnant economic growth (Kaplan and Rauh, 2010).

The global financial crisis of 2008 has exemplified how financialization has become dominant in the economies. A large growth of the financial industry tends to influence government policy and regulation (Krippner, 2005). In democratic countries politicians have appreciated and embraced financialization. They tend to use the funds to finance projects that gain them more power. Some scholars have found that financialization benefits the elite and has no significant contribution on the lower- and middle-class persons (Erturk et al., 2007). They argue that when there is a financialized government that governs the poor and middle class, financialization becomes slow. This means that financial and economic exclusion increases. They also argue that when there is a financialized government that governs the rich persons, financialization becomes rapid. A large share of the financial sector has the propensity to dominate economic activities in a democratic country (Do and Levchenko, 2007). An adequate demonstration has been falling profits of several industries during recessions, while the financial industry profits were resilient (Crotty, 2008). Economic recessions were also avoided using financialization. These were achieved by de-regulation of the financial markets and therefore attracting capital flows (Krippner, 2005). Some

scholars argue that in the process of financialization banks benefits themselves over the ordinary society (Tomaskovic-Devey and Lin, 2011).

The financial system of South Africa follows the same channels as in countries with large financial markets (Mutize et al., 2020). Persons with disposable incomes and savings are ultimate lenders and persons who need funds are ultimate borrowers. The ultimate borrowers and lenders are the household sector, corporate sector, government sector, and foreign sector. They exchange funds in the form of non-marketable debt, marketable debt, and shares. Non-marketable debt includes cash deposits into banks. Marketable debt includes fixed income securities usually called bonds. When banks are in short supply of money they can loan from the central bank (Angelis et al., 2005). Alternatively, banks can borrow money from each other through the central bank window which is called the inter-bank system. Loans between bank-to-bank carries slightly higher interest rate, called the inter-bank rate, compared to loans from central bank to a bank, which carries a key interest rate usually called the repo rate. The central banks use the repo rate as a monetary policy tool to influence conditions in financial markets. Persons also invest money into Quasi-Financial Institutions (QFIs) such as development finance institutions and finance corporations. The central bank supply money to the public in the form of certificates of deposits. Banks borrow from the public in the form of taking in deposits and lend the public through credit (De Bondt, 2005). The bank charges the prime interest rate for lending money and pays the deposit interest rate. The bank profit between these two interest rates is the bank margin, which is the profit for the bank. The prime rate is higher than the deposit rate (Matemilola et al., 2015). Banks can make use of deposits to invest in investment vehicles such as the bond and stock markets. The public can invest in shares and debt directly and indirectly in the capital market. Indirectly through banks, QFIs, and investment vehicles, and directly through the securities exchange. Hence, the growth of assets of banks and market capital of the securities market is representative of the growth of financialization in the overall economy (Agbloyor et al, 2014).

## 3. Methodology

### 3.1. Theoretical model

The study is based on the framework of the neoclassical growth theory. In this theory we adopt the Solow growth model which is aimed at assessing the determinants of economic growth in the long run (Solow, 1999). The Solow model

describes that time is discrete and therefore Xt is the value of an independent variable X at time t. From the Solow model we apply Growth Accounting which tells us by how much a country's economic growth can be explained by its covariates (Barro, 1999). The Growth Accounting framework can enable us to decompose the growth into three components: financialization (F), control variables (X), and initial economic growth (Yt-1). This framework is useful in empirical research that aims to investigate the effect of financialization on aggregate economic performance. It is also useful to interpret the results of the financialization literature with a credible and scientifically understood framework. We adopt the Growth Accounting framework articulated by Barro (1999), and create our first-order Taylor series which is approximated by Equation 1.

$$Y_{t+1} - Y_t = \frac{\partial Y_t}{\partial F_t}(F_{t+1} - F_t) + \frac{\partial Y_t}{\partial X_t}(X_{t+1} - X_t) + \frac{\partial Y_t}{\partial Y_{t-1}}(Y_{t+2} - Y_{t1}) + e_t \quad (1)$$

Therefore, dividing both sides of the equation by Yt will yield Equation 2.

$$\frac{\Delta Y_t}{Y_t} = \frac{\partial Y}{\partial F}\frac{\Delta F_t}{Y_t} + \frac{\partial Y}{\partial X}\frac{\Delta X_t}{Y_t} + \frac{\partial Y}{\partial Y'}\frac{\Delta Y_{t-1}}{Y_t} \quad (2)$$

Equation 2 decomposes GDP growth into portions that can be attributed to growth in financialization, control variables, and initial GDP growth. The part of GDP growth which can be explained by financialization is indicated by Equation 3.

$$\frac{\partial Y}{\partial F}\frac{\Delta F_t}{Y_t} = \frac{\partial Y}{\partial F}\frac{\Delta F_t}{F_t}\frac{F_t}{Y_t} = \alpha_F \frac{\Delta F_t}{F_t} = \alpha_F g_F \quad (3)$$

The part of GDP growth which can be explained by a vector of control variables is indicated by Equation 4.

$$\frac{\partial Y}{\partial X}\frac{\Delta X_t}{Y_t} = \frac{\partial Y}{\partial X}\frac{\Delta X_t}{X_t}\frac{X_t}{Y_t} = \alpha_X \frac{\Delta X_t}{X_t} = \alpha_X g_X \quad (4)$$

The part of GDP growth which can be explained by the initial GDP growth is indicated by Equation 5.

$$\frac{\partial Y}{\partial Y'}\frac{\Delta Y'_t}{Y_t} = \frac{\partial Y}{\partial Y'}\frac{\Delta Y'_t}{Y'_t}\frac{Y'_t}{Y_t} = \alpha_{Y'}\frac{\Delta Y'_t}{Y'_t} = \alpha_{Y'} g_{Y'} \quad (5)$$

Substituting back in Equation 1 yield the GDP growth as determined by growth in financialization, control variables, and initial GDP growth as given by Equation 6.

$$g_y = \alpha_F g_F + \alpha_X g_X + \alpha_{Y'} g_{Y'} \quad (6)$$

Various scholars have justified the link between the Solow model and Financialization. It is commonly known as the Solow's economic growth accounting model (Solow, 1999). Using Growth Accounting framework, Levine (2005) has found empirical evidence between the depth and breadth of financial markets and economic performance. The empirical work of Levine has been extended by Akinci et al. (2014) who found empirical evidence for European countries by using the Growth Accounting macroeconomics framework.

The use of this standard neoclassical economic model has been useful in the finance-growth nexus as it exudes the theoretical channels of how financialization affect economic growth (Barro and Sala-i-Martin, 1995). In the standard neoclassical theory, financialization is not explicitly modelled. However, the theory asserts that Savings and Investment are the sources of growth (Mankiw et al., 1992). The assumption made is that Savings is directly translated to investment and that financialization affects growth through the financial markets.

### 3.2. Empirical Model

From the neoclassical growth theory, we can apply the Quantile Regression (QR) econometrics model. We use quantiles to describe the distribution of dependent variable (Koenker and Bassett, 1978). Quantiles is used synonymously with percentiles; therefore, percentile is used widely used in this paper. Contrary to Ordinary Least Squares (OLS) which estimates the conditional mean of dependent variable, QR estimates the conditional median (Feng et al., 2023). With QR we can obtain comprehensive results about the relationship between independent and dependent variables (Escanciano and Goh, 2014). The linear QR regression model is given by Equation 7.

$$y_i = x_i'\beta_q + e_i \tag{7}$$

Where $\beta_q$ is the vector of unknown parameters associated with the *qth* percentile, $y_i$ is the dependent variable, and $x_i'$ is a vector of independent variables. The OLS minimizes $\sum_i e_i^2$ and the median regression minimizes $\sum_i |e_i|$. In contrast, QR minimizes $\sum_i q|e_i| + \sum_i (1-q)|e_i|$ which is a summation that asymmetrically penalizes the $q|e_i|$ in case of underprediction and $(1-q)|e_i|$ in case of overprediction (Belloni et al., 2019). The *qth* QR estimator minimizes over $B_q$ the objective function given by Equation 8.

$$Q(B_q) = \sum_{i:\, y_i \geq x_i'\beta}^{N} q\left|\, y_i - x_i'\beta_q\right| + \sum_{i:\, y_i < x_i'\beta}^{N} (1-q)\left|\, y_i - x_i'\beta_q\right| \tag{8}$$

Where $0 < q < 1$. QR uses linear programming methods whereas OLS used maximum likelihoods. In QR we have $B_q$ which depicts different choices of $q$ can estimate different values of $\beta$. Quantile regression has a linear specification, $Q_q(y_i|x_i) = x_i'\beta_q$, and the marginal effect of the *jth* regressor is the coefficient for the *qth* percentile, $\frac{\partial Q_q(y|x)}{\partial x_j} = \beta_{qj}$. The parameter $\beta_{qj}$ estimates the change in a specific percentile *q* of the dependent variable *y* which is produced by a one-unit change in the independent variable $x_j$ (Belloni et al., 2019).

### 3.3. Data

Table 1 includes the variables that are used in the empirical assessment. The dependent variable is the GDP growth which is an acceptable measure of aggregate economic activity and performance (Barro, Solow, 1999). The independent variables that we support as the key indicator of financialization is the growth in Finance Value Added (FVA). Other factors that help determine GDP in the finance-growth nexus are the Market Capitalization of domestic listed companies, Credit-to-GDP ratio, Total Banking Assets, Total Investment, and the Initial GDP growth.

**Table 1.** Variables in the Financialization and Macroeconomy Nexus

| Label | Name | Source |
|---|---|---|
| ***Dependent variable*** | | |
| *gdp* | Nominal GDP growth, USD, Annual % | Statistics South Africa, Fitch Solutions |
| ***Independent variables: Financialization*** | | |
| *fva* | Finance nominal GVA, USD, Annual % | South African Reserve Bank, Fitch Solutions |
| ***Independent variables: Controls*** | | |
| *mcap* | Market capitalization of listed do mestic companies, % of GDP | World Federation of Exchanges database, World Bank |
| *cgr* | Credit-to-GDP ratio | Bank for International Settlements |
| *tba* | Total banking assets, % of GDP | South African Reserve Bank, Fitch Solutions |
| *tinv* | Total investment, % of GDP | South African Reserve Bank, Fitch Solutions |
| *gdp_1* | Initial Nominal GDP growth, Annual % | South African Reserve Bank, Fitch Solutions |

We use annual data from 1994 to 2021 from various sources, totalling 28 years. The data sources for our study are Fitch Solutions, Bank of International Settlements, South African Reserve Bank, Statistics South Africa, World Federation of Exchanges database, and World Bank. In the following text we describe, justify the use of each variable in the study, and how the variable is measured at the time of data collection.

Nominal Gross Domestic Product [gdp] growth refers to the rate of change in a country's gross domestic product (GDP) over a specific period. GDP is the total value of goods and services produced within a country's borders during a given period. GDP growth is an important measure of an economy's health and reflects the rate at which the country's output is expanding or contracting. Positive GDP growth indicates that the economy is growing, while negative growth indicates that the economy is contracting. GDP growth is often used as an indicator of a country's economic performance and is closely watched by policymakers, investors, and analysts (Thore and Tarverdyan, 2022).

Nominal Finance Gross Value Added [fva] is a measure of financialization because it reflects the growth in the overall size of financial sector. We believe that it is the best measure of aggregate financialization because it captures the value added by the financial sector, measures its contribution to GDP, reflects the size of the financial sector, and provides a reliable estimate of financial activity. Finance value added is a reliable estimator since its data comes from official statistics of the country. A standard methodology has been applied in its calculation.

Market capitalization of listed domestic companies [mcap] measures the size and depth of a country’s capital markets. This indicator is calculated as the total number of shares multiplied by the market value per share outstanding for listed domestic companies (Farooq, 2022). Market capitalization shows us the total capital that is available to finance profitable business projects of domestic companies (Dias, 2013).

Credit-to-GDP ratio [cgr] serves as a measure of the growth of private sector’s credit relative to the country’s GDP. Credit-to-GDP ratio is calculated as the total credit of a country divided by the total GDP of a country[2]. It is recommended that this ratio be used to measure the level of credit risk in the economy, because when the ratio is high it signals banks vulnerability to GDP shocks.

[2] Credit-To-GDP Gap Calculation Using Multivariuate HP Filter. Magyar Nemzeti Bank, MNB Occasional Papers, 136. https://www.mnb.hu/letoltes/mnb-op-136-final-1.pdf

Total banking assets [tba] includes the aggregate of assets and liabilities of banks in a country. The assets are total items that are owned by the banks in a country, such as loans and securities. The liabilities are items that are owed by the banks, such as deposits and interbank loans (Werner, 2016). Total banking assets informs us about the growth of the banking industry in the financial system. The South African banking industry is highly concentrated, with few banks having a market share of an estimated 80 percent (Simatele, 2015).

Total investment [tinv] refers to the sum of net portfolio investment and net foreign direct investment (FDI). Scholars found a long run relationship between portfolio investment and economic growth in 18 developed countries and 27 developing countries (Sugozu et al., 2022). In most countries FDI has been a good source of finance and has been found to have a positive effect on output growth in various countries (Orji et al., 2021).

Initial Real GDP growth [gdp_1] is the previous value of real GDP growth rate. The lagged variable is included because it is believed that growth rates tend to depend on their past values (Coen et al., 1969). The use of lagged explanatory variables is common in growth theories. Lagged GDP growth is also useful as a measure of convergence, that is, to know if the country's growth is catching up with growth levels of other countries (Barro and Sala-i-Martin, 1995).

## 4. Results and Discussion

This empirical study utilized quantile regression modelling to investigate the effect of financialization on economic growth. We find that the QR model is an appropriate methodology that provides answers to our research question and hypothesis. The model enabled us to estimate how economic growth is affected by financialization at its different levels.

Table 2 depicts an economic state when GDP is at a low growth is explained by a 25th percentile, a moderate growth is explained by a 50th percentile, and a high growth is explained by a 75th percentile (Mello and Perrelli, 2003). We find that the estimated coefficient of financialization, fva, is positive and significant at all percentiles of economic growth, gdp. This positive effect is progressive as an increase in finance is associated with higher levels of economic growth. All the control variables are statistically significant at higher levels of economic growth. We therefore postulate that an increase in the size of the financial sector in South Africa has a positive effect on economic growth.

We find that the causal and positive finance-growth nexus can be supported by their correlations. Figure 1 shows the correlation coefficients between economic growth, financialization, and control variables. The table depicts that there is an extraordinarily strong and positive correlation between GDP and FVA. There is a positive correlation between GDP and FVA because the financial sector plays an essential role in the economy and contributes significantly to the country's overall economic output. The finance industry provides critical services to households, businesses, and governments, such as providing loans and credit, facilitating payments, managing risks, and investing in financial markets. These services help to drive economic growth and development, which, in turn, boosts the country's GDP.

**Table 2.** Quantile regression results (1994-2021)

| **gdp** | **q.25** | **q.50** | **q.75** |
|---|---|---|---|
| fva | 0.969***<br>(14.99) | 0.972***<br>(17.48) | 0.984***<br>(55.43) |
| mcap | -0.0151<br>(-0.82) | -0.0307<br>(-1.93) | -0.0238***<br>(-4.69) |
| cgr | 0.541<br>(1.76) | 0.817**<br>(3.08) | 0.755***<br>(8.92) |
| tba | -0.156<br>(-1.09) | -0.253<br>(-2.06) | -0.227***<br>(-5.80) |
| tinv | -0.250<br>(-0.57) | -0.514<br>(-1.36) | -0.470***<br>(-3.90) |
| gdp_1 | 0.0246<br>(0.38) | 0.123*<br>(2.22) | 0.148***<br>(8.35) |
| _cons | -19.96*<br>(-2.27) | -24.02**<br>(-3.18) | -23.46***<br>(-9.73) |
| N | 26 | 26 | 26 |

**Note:** t statistics are given in parentheses. * p<0.05, ** p<0.01, *** p<0.001; q.25=25$^{th}$ percentile, q.50=50$^{th}$ percentile, and q.75=75$^{th}$ percentile.

When the finance industry is thriving, it generates higher levels of FVA, which is a measure of the value added by financial intermediaries in the production process. As GDP grows, there is typically an increase in demand for financial

services, resulting in higher levels of FVA. In turn, this contributes to higher levels of economic activity and further GDP growth.

Moreover, the financial sector's growth can also create a positive spill over effect in other sectors of the economy, such as manufacturing, agriculture, and services, by providing them with the necessary funding to expand their operations, invest in new technologies and equipment, and hire additional workers. This creates a virtuous cycle of economic growth, where the financial sector and the broader economy mutually reinforce each other, leading to a positive correlation between GDP and FVA.

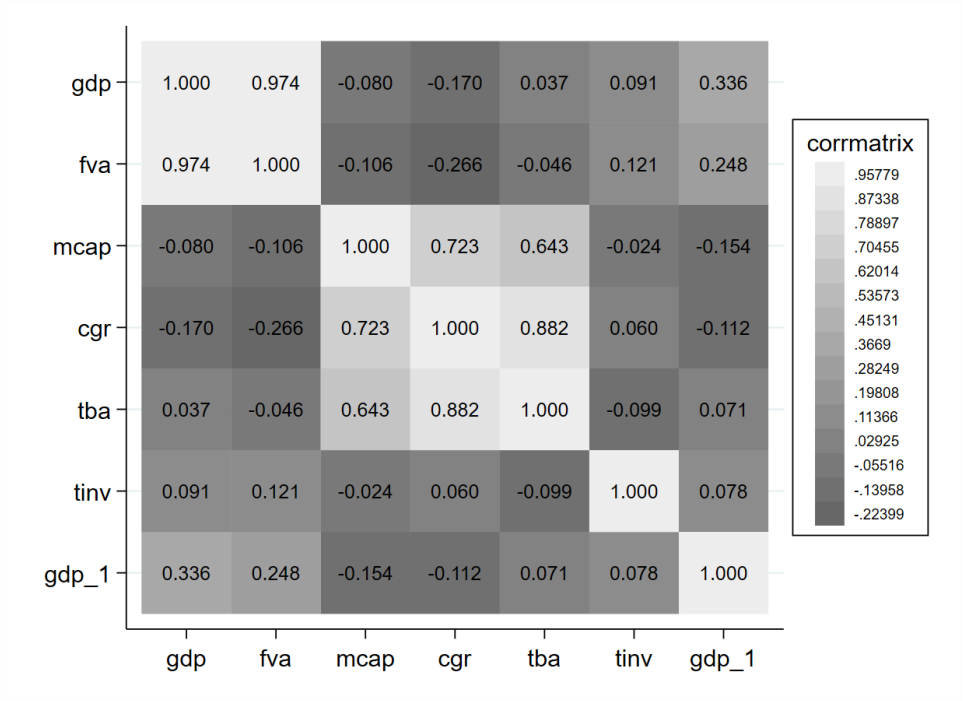


**Figure 1.** Correlation Matrix (1994-2021)

Figure 2 depicts the trend of FVA and GDP growth from 1994 to 2021. The trend is consistent with the correlation coefficient and shows that changes in FVA are associated with changes in GDP growth. This tells us that when aggregate financial activity increases both FVA and GDP growth increases. Conversely, during economic downturns, both FVA and GDP growth decrease as the financial sector contracts and the overall economy slows down.

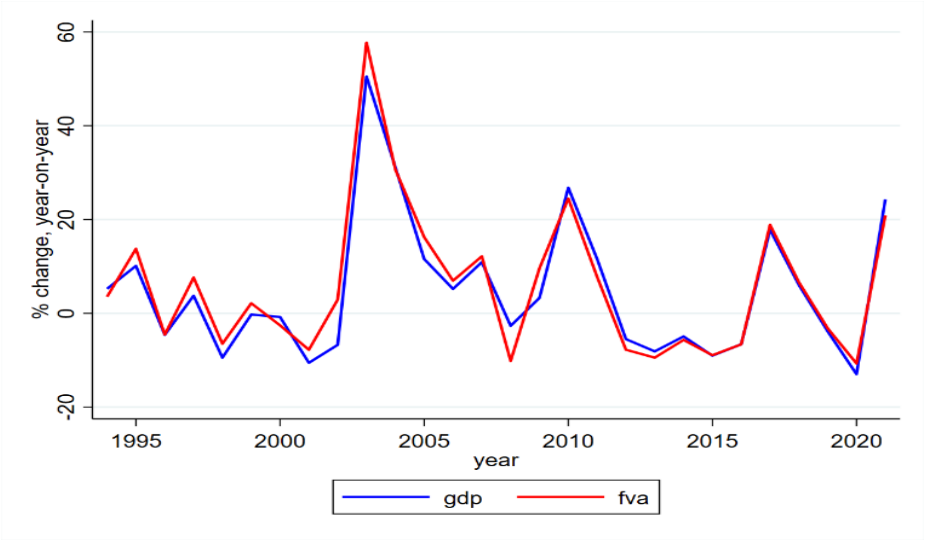


**Figure 2.** GDP and Finance Value Added (1994-2021)

## 5. Conclusion

The aim of the study is to estimate the effect of financialization on economic growth in the Republic of South Africa. Economic growth is represented by GDP growth and financialization is represented by the Finance Value Added. A novelty of this study is the adoption of the Finance Value Added as a key measure of financialization. This measure is a powerful indicator of financialization because it captures the growth in the size of the overall financial sector. To capture the comprehensive picture of the effects we applied the quantile regression methodology. From a sample period of 1994 to 2021 we captured how financialization affects economic growth in the long run. We found that financialization has a highly significant and positive effect all levels of economic growth. This positive effect is progressive as an increase in financialization contributes more to higher levels of GDP growth. We can also conclude that South Africa can take the opportunity of attracting robust investments and building a more inclusion financial environment to increase its economic growth. Our future research plan is to study the effect financialization on economic growth of developing countries with large financial sectors.

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