IMPACT OF MACROECONOMIC VARIABLES ON THE CONSTRUCTION SECTOR

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Abstract

The construction industry is the main accelerator of the country's economy. Therefore, research studies on the impact of economic influences on the construction industry are vast. However, finding the main macroeconomic factors is limited in the Albanian industry (Puci et al., 2022). To fill the research gap, this paper aims to identify the macroeconomic variables that influence the sector of construction through an empirical investigation. To achieve this objective, an empirical study is done where the data set is defined as panel data. The model includes four independent variables: *gross domestic product (GDP) growth*, *inflation rate*, *exchange rate*, and *interest rate*; whereas the dependent variable is represented by return on assets (*ROA*) for 36 audited companies from 2010–2020, making a total of 396 observations. Multiple regression through EVIEWS 10 software is used to identify any potential relationship among them. The results of this paper indicate that all the variables were statistically significant; *GDP growth* and *interest rate* were proved to positively impact the profitability of companies operating in the construction sector; whereas the two other variables such as *inflation rate* and *exchange rate* negatively impact *ROA* for the period examined. Lastly, the paper emphasizes the role of the government as an investment-led industry; for the nation's prosperity construction sector is ultimate. Considering the role of construction in the development of Albania, it is necessary for the government to pay adequate attention to this sector.

Keywords: Profitability, Construction, Macroeconomic Variables, Regression, Panel Data

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1. INTRODUCTION

The construction sector in Albania is the main accelerator of the country's economy. Its contribution to the economy has been growing for the past years. As reported by INSTAT the increase in the sector of construction overcomes that of the gross domestic product (GDP) growth rate. The performance of the construction sector is thoroughly related to the macroeconomy and is thus subject to macroeconomic variations. That, in some cases, can lead to the insolvency of this industry.

Construction is one of the utmost active sectors of the Albanian economy due to its high growth rates and its weight in the overall GDP during the last decade. This sector plays an important role in the growth of per capita income, as is involved in a substantial proportion of the active labor force (Khan, 2008). It can be considered an instrument for employment to many skilled, semi-skilled, and unskilled employees.

Further, the well-being of an economy is dependent upon the economic growth of its people and its industries. Through the creation and empowerment of businesses, a higher standard of living is offered to citizens. Admitting the significance company's impact on the economy researcher and policymakers have dedicated large resources to generating and implementing policies to help its success by assuring economic growth (Olanipekun et al., 2020). Businesses play an important and apparent role in the life of individuals too, and for this goal, successful businesses are vital to the development of a country. Thus, it is necessary for policymakers and stakeholders, to understand the process and the corresponding variables that limit or encourage the business's growth (Singla & Samanta, 2019).

Above said, the main purpose of this research is to develop a model, which examines the effect of potential macroeconomic indicators on the construction sector in Albania. As such, this research addresses the following research question:

RQ: To what extent is the construction industry in Albania affected by macroeconomic factors?

To answer this question, the study will focus on 36 companies operating in the construction industry from 2010–2020. Further, the return on assets (*ROA*), the dependent variable, is chosen as representative of firms' profitability whereas, *GDP growth, inflation rate, exchange rate*, and *interest rate* are chosen as the main potential macroeconomic determinants of financial performance, referred to as the independent variables. The results are further analyzed from a financial aspect and importance.

The outcomes of this study reveal that all the variables were statistically significant; *GDP growth* was proved to positively affect the profitability of companies in the construction sector; whereas the three other variables such as *inflation rate, exchange rate*, and *interest rate* negatively affect *ROA* for the period surveyed.

The structure of this paper is as follows: Section 2 reviews the literature related to the topic. The main emphasis is given to previous authors' findings of the impact macroeconomic factors have on the profitability of construction companies. Section 3 analyzes the methods used to develop and test the empirical model. Also, the population, sample, and hypothesis raised are further detailed in this section. Section 4 presents and analyzes the results of the empirical test. Section 5 summarizes the entire work, concludes, and recommends based on the output of the empirical research. Section 6 introduces conclusions obtained from the results of the study.

2. LITERATURE REVIEW

For this research selected from the Albanian National Center of Business, the companies of the construction sector, a total of 112 companies, this sample of companies that financial statements were audited. This reduced the sample to 34 companies. Regarding the time frame: companies legally started to upload their statements to the Albanian National Center of Business after July 2008. Therefore, the sample started the time frame in 2010 until 2020. During 2021 the authors have been working to analyze the data received.

Fiscal policy is the application of government spending and tax policies to influence economic conditions, particularly macroeconomic factors like aggregate demand for goods and services, employment, inflation, and economic growth. The objective of fiscal policy is to maintain the state of full employment, and economic stability and to stabilize the rate of growth. The main purpose of fiscal policy for an underdeveloped economy is to accelerate the rate of capital formation and investment; both in the public and private sectors (Ahmad & Nadiyasu, 2020).

2.1. Main objectives of fiscal policy

The main objectives of fiscal policy are listed below:

a) *Full employment* — the first and most important purpose of fiscal policy in a developing economy is to create and maintain full employment. Fiscal policy is the application of government spending and tax policies to influence economic conditions, particularly macroeconomic factors like aggregate demand for goods and services, employment, inflation, and economic growth. These investments would contribute to the creation of new jobs and a boost in the economy's productivity efficiency.

b) *Price stability* — economic growth and stability are universally recognized as shared goals for developing countries. They may be managed in a variety of ways; fiscal policy is the most potent of these methods. As a result, inflation is a persistent phenomenon in growing countries, where there is a propensity for prices to rise due to an increase in government spending. Aggregate demand surpasses aggregate supply because of rising income. Consumer and capital products fail to keep up with expanding income.

c) *Increase economic growth* — in a developing economy, fiscal policy should primarily aim to achieve faster economic growth. However, without economic stability, a high rate of economic growth cannot be reached or sustained. As a result, fiscal tools like taxation, public borrowing, and deficit financing should be utilized appropriately to ensure that output, consumption, and distribution are not harmed. It should boost the economy, which will assist enhance national and per capita income.

d) *Optimum allocation of resources* — fiscal measures like taxation and public expenditure programs, can greatly affect the allocation of resources in various occupations and sectors. As it is true, the national income and per capita income of underdeveloped countries are very low.

e) *Encourage investment* — fiscal policy aims at the acceleration of the rate of investment in the public as well as in private sectors of the economy. Fiscal policy, in the first instance, should encourage investment in the public sector which in turn effect to increase the volume of investment in the private sector.

d) *Equitable distribution of income and wealth* — a suitable fiscal policy of the government can be devised to bridge the gap between the incomes of the different sections of society. So, well-planned fiscal programs, and public expenditure can help the development of human capital which in turn possesses positive effects on income distribution.

e) *Economic stability* — fiscal measures, to a larger extent, promote economic stability in the face of short-run international cyclical fluctuations and the face of internal and external forces.

f) *Capital formation and growth* — capital assumes a central place in any development activity in a country and fiscal policy can be adopted as a crucial tool for the promotion of the highest possible rate of capital formation.

Following the gradual transition to a market economy in the early 1990 and rapid improvement of an important part of economic indicators by the end of the 1990s, the Albanian 6 government focused on maintaining macroeconomic stability, reducing poverty, and achieving sustainable non-inflationary economic growth. The government also planned to achieve fiscal consolidation by cutting the budget deficit and reducing the public debt through ongoing fiscal consolidation. As a result, fundamental reforms in the expenditure and revenue-collecting systems have been under constant examination in the public finance sector. The philosophy behind these fiscal reforms was to reduce current expenditures (primarily personnel costs, subsidies, and the privatization of state-owned enterprises), expand the tax base, simplify, and implement a new tax system, promote tax incentives by lowering business tax burdens, and reduce informality and tax evasion. As a result, the budget deficit in 2010 was reduced to 3.2 per cent of GDP, down from 9.6 per cent in 1998, owing to decreases in government subsidies, personnel spending, and debt service interest payments.

During the period 2007–2009, however, the budget deficit and public debt increased because of both automatic stabilizers in the form of lower-income and countercyclical fiscal policy in the form of wage and capital spending increases. Albania's tax system has likewise undergone significant changes in recent decades. As a result of the changes in tax legislation, a slew of new projects was launched, culminating in the passage of a new fiscal package in the second half of 2007. Some of these reforms aimed to boost corporate incentives while also bringing in more tax money. The switch from a progressive to a 10% flat income was one of these measures and profit tax system (2008), as well

as the abolition of all exemptions and benefits provided by the previous tax system. Furthermore, due to membership in Central European Free Trade Agreement (CEFTA) and the World Trade Organization, as well as the Stabilization and Association Agreement with the European Union, there have been significant decreases in customs tariffs. Other changes included a significant increase in national, local, and excise taxes, a reduction in social contributions from 42.5 per cent in 2006 to only 17 per cent in 2009, a reduction in small business tax from 4 per cent in 2005 to 1.5 per cent in 2006, and a change in the value-added tax (VAT) registration threshold from 5 million ALL turnover per calendar year to 1.5 per cent in 2006. All these reforms and structural adjustments have resulted in a more balanced rise of government tax revenues, even if nominally they are increasing. Indirect taxes, such as customs charges, VAT, and excise tax, are important indicators of the country's economic activity and generate most tax revenues, accounting for around half of the total. Even though they apply to numerous categories of income and have been damaged by fiscal fraud, profit tax and personal income tax are the biggest contributors in the group of direct taxes, accounting for around 13.8 per cent of total revenue in 2010 compared to only 8% in 1998.

Additionally, public spending policies have been aimed at encouraging long-term growth 7 and eliminating poverty and wealth disparities. As a result, a reducing-oriented government expenditure policy based on the medium-term fiscal framework focused on decreasing current expenditure to free up funds for strategic capital investment outlined in the medium-term fiscal framework. As a result, the ratio of total public expenditure to GDP decreased from 35 per cent in 1998 to around 29 per cent in 2010. Despite accounting for more than 80% of total expenditure, the current expenditures to GDP ratio have been declining, falling to 24.4 per cent in 2010 from 28.7% in 1998. Personnel (26 per cent), interest payments (18 per cent), and social contributions (27 per cent) account for the biggest percentage share of total current spending throughout this time. Nonetheless, fiscal policy cuts in personal expenditure are mostly attributable to a reduction in the number of employees in the public sector through increased efficiency and privatization, as well as a reduction in social contribution expenditure. Interest payments have decreased mostly because of improvements in government timeframe borrowing, as well as reductions in public debt and interest rates, as well as the extension of the debt maturity period, which has been followed by a significant increase in social insurance outlays.

Furthermore, between 1998 and 2010, capital expenditures averaged 6.3 per cent of GDP, despite being raised and/or lowered in response to Albanian macroeconomic conditions and priorities defined in the medium-term fiscal framework. As a result, capital investments increased by 8.6% and 8.4% in 2008 and 2009, respectively, due to infrastructure investment priority. In general, capital expenditure was distributed in such a way as to keep spending in areas like health, education, and infrastructure at an important level. These expenses are mostly supported through domestic borrowing, which

accounts for more than 60% of the total. In the medium term, fiscal policy will be geared toward fiscal consolidation, by the fiscal rules laid out in the Organic Budget Law. To reduce debt-related vulnerabilities that stifle growth and produce macroeconomic instability, fiscal consolidation, and debt reduction are critical. We have made significant fiscal adjustments in recent years to lessen public debt-related vulnerabilities. Between 2014 and 2018, the overall fiscal balance improved by around 3.2 percentage points of GDP, thanks to revenue collection, spending control, and the adoption of many administrative reforms. Since 2016, the primary balance has been positive (primary surplus), compared to a primary deficit of 2.3 per cent in 2014. Tax collections have risen significantly in recent years, from 22.2 per cent of GDP in 2013 to almost 26 per cent of GDP in 2018, thanks to improved tax policy and administration. The ant informality policy also aided in increasing revenue collection, which is still a top focus.

On the expenditure side, reforms in the pension and energy sectors, as well as increases in public 8 administration efficiency, resulted in significant savings. In addition, during these years, the risks of altering terms have been mitigated by diversifying and extending the maturity of public debt significantly. The consolidating fiscal policy aims to maintain the downward trend in public debt as a percentage of GDP that began in 2016. The public debt is predicted to shrink to around 65.5 per cent of GDP in 2019, 63.6 per cent in 2020, and 59.9 per cent in 2021, which is an ideal but still significant decrease from the peak of 72.7 per cent in 2015. The medium-term indicative aim for public debt reduction in 2021 stays below 60%. In terms of government debt net of liquid assets (cash deposits held by the central bank), the reduction will be from 66.6 per cent predicted at the end of 2018 to 59.5 per cent in 2021, a drop of 7 per cent points in three years. The baseline fiscal scenario aims for a budget deficit of 1.9 per cent of GDP in 2019, 1.6 per cent in 2020, and 1.2 per cent in 2021 to accomplish this medium-term fiscal policy indicative target on public debt. Simultaneously, it is aiming for a positive and expanding primary balance in the years 2019–2021, with a primary balance of 0.5 per cent of GDP in 2019, 0.9 per cent in 2020, and 1.5 per cent in 2021. In addition, the current balance, which is defined as the difference between public investment and the annual deficit, is set to be high in the short term and steadily increase over time. The current balance in the medium term is targeted at the level of 3.3% of GDP in 2019, 3.4% in 2020, and 3.7% in 2021. At the same time, this fiscal framework allows for fiscal policies that promote economic growth.

Central government public investments are maintained at an average of 5% of GDP in the short and medium term, which is critical for sustaining aggregate demand in the near term and shifting potential growth in the medium and long term. Continued reforms in public fiscal management are critical for increasing budget efficiency and making room for more productive investment in the medium and long run. We have started several fiscal and monetary policies reforms, some of which have already been completed, others are nearing completion, and we are still working hard to complete them all. The draft budget for 2022 empowers the Albanian economy to recover from the shocks of the earthquake and the pandemic, as well as the ongoing medium to long-term challenges that lie ahead. The state budget for 2022 is based on the premise of stable and positive economic growth. It anticipates an increase in budget revenues of roughly 8% in 2022 over the predicted level in 2021, bringing a total of 28.7% to GDP. According to draft budget forecasts, the budget deficit is expected to fall to 5.4 per cent of GDP in 2022, down from 6.8 per cent this year. In addition, the primary deficit is expected to be reduced by 1.9 percentage points of GDP by 2022, while total public debt is expected to decrease by 1.9 percentage points. Lastly, investments will account for 6.4 per cent of GDP. The taxation and expenditure policies are some of the fiscal policies that will affect this growth.

2.2. Construction profitability in the literature

The construction sector is a super competitive industry. Companies need to be at the best of their control and planning to make sustainable and long-term profits (Bang & Olsson, 2022). There is an increasing literature that assesses the impact of influences, policies, and institutions, on business performance and economic growth. Despite the methods used, researchers have concluded that favorable micro and macro factors can stimulate businesses toward better financial performance (Cruz et al., 2019). Various papers investigate the impact at the industry level (Beck et al., 2010). In the study of Tokuoka (2012), the environment of business in India affects corporate investments. Macroeconomic variables influence the profitability of a company's industry differently. The failure or success of any business is dependent upon its ability to adjust to the situation in which the company runs (Okangi, 2019).

GDP growth suggests higher business activity improving the profitability of the industry where the company belongs. Although it is difficult to establish the direction of causation, the results indicate that economic instability is generally linked with low business performance. As businesses engage more in international trade, they are more exposed to exchange rate risk. Exporting companies usually gain from a depreciation of the home currency (Shapiro, 1975). A number of the literature exposes a negative effect of exchange rate volatility on financial performance whereas other authors claim that its effect can be ignored (Bartov & Bodnar, 1994; Bernard & Galati, 2000). A direct relationship between construction and national output is observed although it might outperform national output (Wells, 1986; Hua, 1996). The positive relationship was also proved by Lopes (2008), Rameezdeen and Ramachandra (2008), considering the significant role it has in new generating sources of income and employment opportunities. The link between the construction sector and the development of the economy has been proved by other authors as well (Kafati Geadah, 2003; Anaman & Osei-Amponsah, 2007).

The inflation rate has a vital impact on the cost of production and the purchasing power of consumers. During times of high inflation rates, customers conditioned by a fixed level of income

will decrease their purchasing power, which will eventually be reflected in reduced demand for goods (Pandey, 2009). In line with these studies, higher prices reduce a business's sale, decreases, therefore, profitability, and in some cases lead to bankruptcy (Myers, 2001). Nevertheless, the degree of influence depends on the type of business activity and elasticity of demand. A positive impact between the two variables was revealed by other authors as well (Nwuba, 2004; Davydenko, 2011).

Interest rates can have an impact on business profitability both negatively and positively, depending on whether the business is a borrower or a lender. However, extreme variations in interest rates can substantially threaten a business's profits, move up expenses, and influence the value of assets and the value of future cash flows (Myers, 1984). Low-interest rates indicate a lower cost of borrowing, which generally translates into better financial performance. Several researchers have proven a positive impact of interest rates on banks' profitability (Davydenko, 2011). Nevertheless, most studies about the impact of interest rates on profitability examine the banking sector, where interest rates are the main driver of financial performance.

3. RESEARCH METHODOLOGY

3.1. Methodological approach

Research methodology can be classified into theory building and theory testing. The latter emphasizes the measurement, whereas the former the meaning. Additionally, the research approach can be empirical with the aim of collecting and processing with statistical techniques relatively a large sample; or theoretical, which is mainly used for theory building. Above said, this study uses a deductive approach that moves toward empirical investigation. The quantitative part is used to analyze the relationships among the chosen variables, compare the relationships among the indicators; test the hypothesis using statistical tools, process data, and present the results.

3.2. Sample

This study will use panel data analysis to identify the possible relationship between construction sector profitability and macroeconomic variables. The target population includes big companies operating in the construction industry, as derived by the General Directorate of Taxation located in the Republic of Albania based on the Law of Large Taxpayers. Based on the list there are 112 large companies operating in the construction sector in Albania. The sample includes construction companies whose financial statements are available at the National Business Center and are chosen only those companies about which their financial statements are audited based on Article 41, of Law No. 10.091 dated March 5, 2009. Therefore, for these reasons, the sample size is reduced to 36 companies operating in Albania from 2010 until 2020 making up 396 observations in total.

3.3. Model specification

To investigate the long-term relationship between *ROA* and selected macroeconomic variables multiple regression is used. The independent variables are *GDP growth*, *inflation rate*, *exchange rate*, and *interest rate*. Whereas the dependent variable is *ROA*. The significance level is equal to 5%. The variables are calculated by the authors using the financial statements of the companies published on QKB (National Business Center).

Empirical tests are conducted using EVIEWS 10 software.

In this paper, four hypotheses are tested:

H1: GDP growth is positively associated with ROA.

H2: Exchange rate is negatively associated with ROA.

H3: Inflation rate is negatively associated with ROA.

H4: The interest rate is negatively associated with ROA.

$$ROA = f(GDP\ growth,\ exchange\ rate,\ inflation\ rate,\ interest\ rate) \qquad (1)$$

where,
• *ROA*: return on assets = net income / total assets;
• *GDP growth*: the rate of growth of GDP compared to the previous year;
• *Exchange rate*: between EUR and ALL;
• *Inflation rate*: the % increase in the level of prices from one year to the other;
• *Interest rate*: lending rate of second-level banks.

The R-squared indicates the part of the variation of the dependent variable that is explained by the independent variables. Afterwards, the null hypothesis will be tested against the alternative one; if the p-value of the model is less than 0.05 then the model is significant. The process of multiple regression requires the fulfilment of some assumptions: normal distribution is required. Jarque-Bera test is generally used for normality indicating a normal distribution for p-values higher than 0.05; heteroscedasticity, which means that the data have the same variance along the line, otherwise the data are heteroscedastic. If the p-value < 0.05 the null hypothesis is rejected, and heteroscedasticity is present; variables should be tested for multicollinearity. This is the case when there is a very high inter-correlation among the independent variables. If the variance inflation factor (VIF) of the variables results is less than 0.2 or above 10 there is the presence of multicollinearity in the data set (Gujarati, 2004). The observations should not be serially correlated. The Durbin-Watson test is used and ranges from 0 to 4, indicating a positive serial correlation for values from 0–1.5 and a negative serial correlation from about 2.3–4.

3.4. Rationale of the selected variables

ROA measures how efficiently a company is using its assets and the earnings utilized by invested assets.

This indicates that the company is generating profit. Increased profit translates to a higher net income and as a result a higher *ROA*. From a long-term perspective, *ROA* highlights leverage capabilities. Various authors have used *ROA* as a performance indicator including Bowman (1980) and Çekrezi (2013).

GDP growth rate is used to see the influence on the profitability of the construction sector. In a prospering economy families and businesses tend to invest which is reflected afterwards in increases in business profitability (Kafati Geadah, 2003; Anaman & Osei-Amponsah, 2007; Vong & Chan, 2009).

An unsteady *inflation rate* increases business uncertainty as they cannot predict accurately their costs and the level of prices. This loss of confidence might lead to a decrease in investments from businesses. Internationally, exports will be less competitive. The impact of inflation has been considered by Myers (2001) and Nwuba (2004).

Exchange rate variations are amongst the most important macroeconomic influences for a business. *Exchange rate* fluctuations, in developing countries, can affect investment growth. The currencies considered are EUR and LEK due to the high transactions of businesses with these currencies.

The currency effect has been examined by various researchers such as Bernard and Galati (2000), Putra et al. (2021), etc.

The interest rate banks charge for lending loans has an impact on business performance as it affects the cost of borrowing. Among the authors who have considered it as an important variable are Crowley (2007), Davydenko (2011), etc.

4. RESULTS

Considering that the assumptions mentioned in the methodology part are met, the regression output can be used for the potential relationship among the variables. The R-squared equals 0.54, indicating that the variables included in the model explain approximately 54% of the variation of return on assets. The model is strong because the p-value is lower than 0.05. Durbin-Watson statistic equals 1.57, showing that the model does not suffer from serial correlation. The model is, therefore, valid for making predictions. The test reveals that all variables are statistically significant since for each case p-value < 5% and |t| > 2.

Table 1. Regression outcome using EVIEWS 10

Variable	Coefficient	Std. error	t-statistic	Prob.
GDP growth	0.145868	0.048722	2.993871	0.0029
Exchange rate	-0.000633	0.000190	-3.334837	0.0009
Inflation rate	-0.187536	0.061428	-3.052946	0.0024
Interest rate	0.281452	0.055213	5.097568	0.0000
C	0.109285	0.022627	4.829840	0.0000
R-squared	0.543689	Mean dependent var		0.069302
Adjusted R-squared	0.493700	S. D. dependent var		0.069123
S. E. of regression	0.047281	Sum squared resid		0.795836
F-statistic	10.87613	Durbin-Watson stat		1.569814
Prob (F-statistic)	0.000000			

Note: Dependent variable: ROA. Method: panel least squares. Sample: 2010–2020. Periods included: 11. Cross-sections included: 36. Total panel (balanced) observations: 396.

The *GDP growth* rate coefficient is 0.146 and its respective p-value is lower than 0.05, thus we can conclude that the coefficient is significant and *GDP growth* rate affects *ROA*. More precisely, shows that a 1% increase in *GDP growth* rate increases *ROA* by about 0.146%. Therefore, the *H1* is accepted. The *exchange rate* coefficient is 0.0006 and its respective p-value is lower than 0.05, thus we can conclude that the coefficient is significant and *exchange rate* affects *ROA* negatively although to almost an insignificant degree. More specifically, it shows that a 1% increase in *exchange rate* decreases *ROA* by about -0.0006%. So, the *H2* is accepted. Further, *inflation rate* and *ROA* are proved to have a negative significant relationship as indicated by its coefficient and p-value, respectively -0.18 and 0.0024. This shows that a 1% increase in the *inflation rate* decreases *ROA* by about 0.18%. Hence, the *H3* is accepted. Lastly, the regression test indicates a positive relationship between *interest rate* and *ROA*. The *interest rate* coefficient is 0.281, which shows that a 1% increase in *interest rate* increases *ROA* by about 0.281%. Thus, the *H4* is rejected.

5. DISCUSSION

In this study, we aimed in determining the macroeconomic factors in the profitability of construction companies. For this purpose, the relationship among the variables was analyzed by using empirical tests through EVIEWS 10. Based on the outcomes the relationships were investigated. The results of *GDP growth* are in line with previous studies (Cruz et al., 2019; Bang & Olsson, 2022). As it is observed, the construction industry has a tendency of following the rate of *GDP growth*, however, government interventions and specific policies have an influence. Better economic conditions result in a macroeconomic expansion, more investments, increase in GDP per capita, which eventually leads to an increase in the demand for fixed assets in a country.

The outcome of the *inflation rate* aligns with the studies of Pandey (2009); Myers (2001), etc. The fluctuations in input prices make construction companies risky. Many constructors tend to suspend work at times when input prices like iron or cement, otherwise the cost will be transferred to final customers which might result in a decrease in demand. The main reason for the increased cost of construction in Albania is the high level of imported materials, where the prices have increased by about 20-25% during this year.

The result regarding *interest rate* contradicts the study of Crowley (2007) and Davydenko (2011) as we expect *interest rate* to have a direct impact on

the cost of capital of construction companies. This can be attributed to the high level of informality in Albania and to a slight lag between the change in prices and movement in activity.

As it is apparent from Table 2 the median stands closer to the mean for *GDP growth*, *inflation rate*, and *interest rate*; suggesting the no existence of extreme values. Whereas for *ROA* and *exchange rate* the gaps are higher, which is confirmed by the minimum and maximum values as well. Also,

the standard deviation for the *exchange rate* is higher, indicating high fluctuation which results in a negative impact on profitability.

A high kurtosis is observed for *ROA*, meaning that the investment in this sector is a risky one, as the distribution appears to be 'fat-tailed'. Lastly, skewness is positive for *ROA* and *interest rate*, indicating that data are skewed right and the respective mean for positive skewness is higher than the median.

Table 2. Descriptive statistics

	ROA	*GDP growth*	*Exchange rate*	*Inflation rate*	*Interest rate*
Mean	0.048	0.021	134.811	0.013	0.085
Median	0.035	0.022	137.760	0.019	0.079
Standard deviation	0.057	0.020	6.466	0.020	0.025
Kurtosis	6.410	2.160	-0.869	2.778	-1.141
Skewness	0.685	-1.496	-0.906	-1.828	0.631
Minimum	-0.283	-0.033	122.990	-0.043	0.059
Maximum	0.312	0.047	140.340	0.035	0.128
Observations	396	396	396	396	396

6. CONCLUSION

In this paper, we have analyzed the profitability of one of the most important sectors in Albania. As indicated, performance measurement offers precious evidence for management to monitor, highlight problems, and motivate. Hence, the first condition to improve business performance is to develop and implement the necessary measures for the performance of businesses. Through these indicators, several stakeholders can get a basic picture of a very complex reality. This research is strongly related to a potential contribution to the literature to have an input to the traditional theories of performance and act as a basis for future research for other researchers.

The main aim of this study was to investigate the extent to which macroeconomic factors affect the profitability of companies operating in the construction sector of Albania for the period 2010–2020. Overall, the results reveal that the model setup is a good one as it satisfies all the econometric assumptions and the p-value is lower than 0.05. More specifically, the regression outcome indicated that all the variables were statistically significant; *GDP growth* and *interest rate* were proved to positively impact the profitability of companies operating in the construction sector; whereas the two other variables such as *inflation rate* and *exchange rate* negatively impact *ROA* for the period examined. However, limitations faced in this study can be overcome in future studies, such as increasing the sample chosen or the time frame. This research can be a stepping stone for future

research with the aim of further analyzing the determinants of construction profitability considering its contribution to the economy. Other variables, mainly specific/micro related might give a better understanding as well.

Another issue elaborated on in this research was the fiscal policy, its objectives, and its impact on the state budget of Albania. As it results, fiscal policy is the type of policy that uses government spending and tax policies to influence economic conditions, particularly macroeconomic variables such as employment, aggregate demand for goods and services, inflation, and economic growth. Its main objectives are to maintain the state of full employment, and economic stability, to stabilize the rate of growth, and price stability, to encourage investments, to ensure the optimum allocation of resources, to allow for equitable distribution of income and wealth, and to accelerate the rate of capital formation and investment (both in the public and private sector) in under-developed countries. Governments normally aim to employ fiscal policy to achieve strong and long-term growth while also reducing poverty. According to the type of fiscal policy (expansionary and contractionary), the government expands or restricts public expenditures, or it may increase or decrease the tax rates for individuals, on the actual economic situation. Albanian economic policies over the previous decade have tried to maintain macroeconomic stability, enable poverty-reduction and non-inflationary economic growth policies, and achieve fiscal consolidation through the reduction of the budget deficit and public debt.

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APPENDIX

Table A.1. Multicollinearity test using EVIEWS 10

Variable	Coefficient variance	Uncentered VIF	Centered VIF
GDP growth	0.023372	2.525767	1.192776
Exchange rate	4.04E-07	916.6290	2.098536
Inflation rate	0.025233	1.863552	1.291078
Interest rate	0.027842	26.98593	2.136409
C	0.005615	699.6517	NA

Note: Sample: 1 396. Included observations: 396.

Table A.2. Heteroscedasticity test using EVIEWS 10

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.397034	Prob. F (4,391)	0.2343
Obs * R-squared	5.579851	Prob. Chi-Square (4)	0.2328
Scaled explained SS	21.43629	Prob. Chi-Square (4)	0.0003