The impact of credit guarantee schemes in the financial performance of SMEs in Albania

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Abstract:

   This paper aims to examine the impact of the credit guarantee for a group of small and medium enterprises in Albania in the period 2019-2021. The data on SME (small and medium enterprises) beneficiaries has been collected from one credit guarantee scheme that first started its activity in 2015, with the objective to encourage financial institutions to provide financial services to businesses on a sustain basis. The SMEs part of this study have been financed from five different banks and have the highest guaranteed value during 2020. We analyze the financial statements of these SMEs in two situations: before and after receiving the guaranteed loan. By using the multiple regression method, we focus on the net income and several variables that are affected by the loan, such as: the total assets, accounts receivables, working capital and interest expenses and we compare both situations. Our results show that the following year, after the guarantee, the net income of the SMEs is positively correlated with the total assets and working capital, while the accounts receivable and the interest expenses have a negative effect on the net income. Overall, the results suggest that there has been a positive effect of the scheme for guaranteed SMEs. The approach and findings are beneficial to policymakers for the future and pave the way by contributing to the literature for further studies by researchers.

Keywords: SMEs in Albania, credit guarantee scheme, access to finance

INTRODUCION

According to the World Bank, credit guarantee schemes (CGSs) are defined as a common form of intervention to facilitiate financing for small and medium enterprises (SMEs) and provide third-party credit risk mitigation to lenders through the absorption of a portion of the lender's losses on the loans made to SMEs in case of default, usually in return for a fee. CGSs are an important instrument to cover the insufficency of the collateral for businesses by offering them financing opportunities through loans from

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financial institutions. SMEs are the businesses that are particularly supported by these schemes, based on their conditions and needs for financing.

SMEs are not always able to submit complete accounting data and other financial documents requested by banks, making the evaluation of applicants complex. The lack of information results in significant information asymmetries between SMEs and banks (Levitsky & Prasad, 1987; Nigrini & Schoombee, 2002). On the other hand, also the absence of collateral hindered the raising of funds directly by banks to SMEs. Different approaches have been used to address the problems of financing constraints faced by SMEs, such as collateral lending, however one of the most common solutions that has been used in many countries is the provision of bank loan guarantees (Beck et al., 2008; Beck et al., 2010). Based on the fact that guarantees are used as a tool that shares the risk between the bank and the guarantee institution in an agreed ratio, in this way the risk and the costs of the bank's operation are reduced and consequently its returns are increased. This is an encouraging motive for banks that offer financing opportunities for SMEs that cannot provide adequate collateral. For many countries around the world, credit guarantee schemes have become a key part of their strategy for easing SME financing constraints. The first guarantee schemes date back to the 19th century and early 20th century, while in developing and emerging countries the first guarantee schemes emerged during the late 20th century (Green, 2003). By 2015, CGSs were applied in almost every country in the world (Pombo et al., 2015). Over the last two decades CGSs have gained increased popularity, especially during the recent global financial and economic crisis because they are an adaptable instrument that can be adjusted to meet the needs of the guarantor and the lender and because they can be used as a counter-cyclical tool during period of crisis (Asdrubali & Signore, 2015 and ADB, 2021).

Specifically, a credit guarantee scheeme is a mechanism of risk transfer and risk diversification; it reduces the risk for the lender by replacing part of the counterparty risk with that of the credit guarantee issuer, which guarantees repayment of part of the loan in case of default. Also, a CGS can diversify risk by providing guarantees to loans in different sectors or geographic areas (Beck et al., 2010). A credit guarantee scheme is always in between the borrower and the lender, therefore it plays the role of a typical financial intermediary. The credit guarantee contract includes three parties: the business (SME), the financial institution (bank), and the guarantor (CGS). The banks lend money to a SME under credit guarantee, and if the loan defaults, CGS will compensate the bank for its losses based on the respective coverage rate. In order to get the guarantee, the SME is charged a certain fee prior to the default event. Beck et al. (2008) report that banks see CGS as the most usual and successful support strategy for SME lending, ahead of directed credit and interest rate or regulatory subsidies. As mentioned also above, the aim of SME credit guarantee schemes is improving SMEs' access to finance. Recent literature has shown that SMEs in particular face higher financial hurdles and are more affected by financial constraints than larger companies.

According to Boocock & Shariff (2002), SMEs are recognized as a motor for economic growth in many countries, particularly in developing countries. Some benefits of a prosperous SME sector are: creating new employment possibilities; strengthening the industrial linkages; promoting pliability and modernization; generating export incomes (Harvie and Lee, 2001; Lerner, 2002; Mensah, 1996). Furthermore, the restructuring role of SMEs in the social and economic expansion is being accepted more and more (Smallbone and Welter, 2001). CGSs enable the reduction of financing

barriers and improve the ability of a company to access bank financing, especially the ability of micro and small companies (Caselli et al., 2019). The aim of CGS is to increase the credit capabilities of SMEs by guaranteeing loans provided by financial institutions (Waniak-Michalak et al., 2022). Moreover, credit guarantees reduce the risk of bankruptcy and indirectly lower the financing cost to reduce differences in the availability of external capital for companies of different sizes (Song et al., 2020). Regarding the classification of the CGSs, there is a wide diversity of schemes worldwide. The diversity is observed in several different directions: funding structure and ownership; restriction to size of businesses; limitation to certain regions or industries; price and risk analysis; individual or portfolio level guarantes. CGSs are implemented and performed by different government institutions, non-profit organisations, financial institutions or business associations, with the purpose of providing better credit access for SMEs. As it is noted that the government has an important role in the financing and management of CGSs, on the other hand, it focuses very little on the part of risk assessment and recovery, since the latter are mainly limited to the private sector. In some schemes, it has also been noted that the Government's role in risk assessment is associated with higher loan default rates, in contrast to many other characteristics. Older CGSs and those that do not apply risk management policies have the highest default rates, indicating that losses accumulate at a later stage after the establishment of a guarantee scheme, and this characteristic is what attracts politicans towards these funds (Beck et al., 2010).

This paper first provides an overview of the existing literature on the operation and development of CGSs in the world and further focuses on the study of the empirical evaluation of one guarantee scheme in Albania. Specific secondary data of the published financial statements of SMEs are obtained through the official website of the National Business Center and then, the analysis of the impact of the guarantee scheme on the performance of SMEs is made through the technique of multiple regression mode. The indicators included in the analysis, which determine the performance of SMEs and are affected by the loan , are: the net income, total assets, total accounts receivables, working capital and the interest expenses. These indicators are analyzed in two situations: before and after receiving the guaranteed loan, to see the effect of the guarantee.

This study is motivated to be developed for three main reasons: First, for the benefit it brings, since there is still no study on the impact in this field for Albania either by scientific researchers or by national or international institutions. Secondly, as a relatively new culture of the financial system, it is intended to provide a scientific study analysis of CGS in the financial performance of SMEs and the promotion of the development of these financial institutions. And thirdly, the paper aims to bring the importance of CGS for the economy of Albania to the scientific debate and to the agenda of policy-making or regulatory financial institutions.

LITERATURE REVIEW

Over the years, many studies have been conducted on the effect of guarantees in different countries of the world. In this section we will present a summary of the findings for some of them. Levitsky and Prasad (1987) presented a review of different credit guarantee schemes in 10 developed and 18 developing countries in the world. Their study focused on the objectives, operations and evaluation of additionality and delivery costs of each credit guarantee scheme. The authors showed successful

examples of schemes that generated additionality like in US, UK and Korea, while noted that those schemes required large subsidies to cover their administrative costs (US and Korea) or the adverse risks associated with received revenues (UK). The success of a guarantee scheme is not undermined by the involvement of government institutions on both sides of guarantee transactions. In general, the study of these 28 countries recommends that the most important achievement of the guarantee schemes is the success of these institutions in contacting the target groups and in creating them new opportunities to finance.

Saldana (2000) conducted a study to assess the economic value of credit guarantees. The study analyzed the guaranteed portfolio of loans from the Guaranteed Fund for Small and Medium Enterprises (GFSME) in Philippine as of year-end 1991, highlighting some implications regarding government guarantee institutions and policymakers. The first implication is related to the suggestion that guarantee schemes use the collateral requirement of financial institutions and their risk management policy as criteria for selecting the typology of businesses that will serve and support them. This means that the coverage ratio for loans must be less than 100 percent. The second indicates that guarantee schemes should strengthen their approval procedures to ensure that guarantees are only given to loans that lack collateral. The third one suggests that these schemes, to expand their scope, should seek the cooperation of financial institutions that want to use the guarantee as a means of reducing risks. Overall, the findings of the study imply that guarantee institutions should broaden the network by involving financial institutions that provide loans with a lack of collateral and subsequently contribute significantly to the benefits of the guarantee.

Beck et al. (2010) observed the typology of credit guarantee schemes around the world by analysing 76 partial credit guarantee schemes across 46 developed and developing countries. The study shows various organizational attributes of credit guarantee schemes and their diversity among countries. The authors identify the role of government and the private sector, the different means of determining prices and reducing risk, and the correlation of these characteristics between countries. The study proves the high role of the government in the financing and management of credit guarantee schemes, but much lower in terms of risk assessment and recovery. On the other hand, it is shown that in cases of government involvement in credit risk assessment, default rates are always higher. Also, the oldest schemes with the highest losses are those funded and directed by the government, proving that the appearance of the costs and obligations of a CGS can be noticed only after a few years. Unexpectedly, it was less common to determine the price depending on the risk and also the limited use of risk management mechanisms. Nevertheless, in some cases it is proven that the high risk assumed by some schemes is compensated through a better risk management. Usually, mutual guarantee schemes are more widespread in high-income countries, while the schemes run by public institutions are more common in less developed countries. However, a main finding is that the schemes with the highest default rates are the older guarantee schemes and those that did not actively use risk management tools. (Beck et al., 2010). Another survey with regard to the types of CGSs was conducted a few years later by Chatzouz et al., (2017). It was focused only in 13 countries of Western Europe and analyzed 18 CGSs operating in those countries during October 2015 – May 2016. This survey indicated that guarantee schemes are usually publicly owned, not-for-profit, operate only in their country, intent to ease collateral restrictions, offer guarantees to banks and non-bank financial institutions, and manage the risks through their government and the EU counter-guarantee. In Western Europe,

the credit guarantee sector is generally well developed, but the guarantee activity is not uniformly distributed across countries. In Italy and Portugal, the activity is stronger in relation to the size of the economy, while in all other countries it lags far behind. A typical example is Greece where this sector is very underdeveloped, and SMEs there find it difficult to get financing.

The efficiency of CGSs can be evaluated in three aspects: financial sustainability, economic additionality and financial additionality (Panetta 2012). The financial sustainability is related to the effect of guarantees on lending conditions, for example the cost and the size of a loan (Boschi et al., 2014). On the other hand, the economic additionality is related to the indirect effects of the guarantee, for example on the SME continuity and the financial performance (Caselli et al., 2019), the employment (Caselli et al., 2019) and the impact on the economy (Lee 2018; Yang et al. , 2021). The efficiency of CGS does not depend only on the type of distribution but on many different factors. It varies in rural and urban areas (Wardhono et al., 2019), as well as the borrowers attributes (size, years, sector, and financial data), loan purpose, loan size, and maturity (Caselli et al., 2021). Ughetto et al. (2017) stated that larger and longer-term loans and also loans for large companies in well-developed areas, are always of better credit conditions. The study of Gonzalez-Uribe and Wang's (2020) indicated that during an economic crisis, guarantees may be used to support operating activities and maintain employment, but mostly for companies that the cost of training and hiring new emplyees is high. Further, Corredera-Catalán et al., (2021) showed that guarantee schemes differ in various countries and regions because of various historical, economic and legal conditions. Also, Waniak-Michalak et al., (2021) provided evidence of the impact that the regional and economic development has on the financial stability of guarantee schemes.

A comprehensive review of existing literature made by Valentin and Wolf (2013) regarding the impact of guarantee scheemes on SME lending, predicted that CGSs support SMEs that would not have been financed without guarantes, and thus create a relationship between the bank and the borrower, through which, in the future banks will be able to obtain more information and consequently will reduce actual information asymmetries. Moreover, the bank costs for guaranteed loans are lower and the lending to SMEs becomes more profitable. Over the last years, many studies have analyzed the causal effect of CGSs depending on the size of the bank loan and have especially attempted to analyze the additional funding to SMEs made possible by the guarantees. The evaluation of the impact of CGSs has been brought to the attention of researchers after the 2000s and the empirical results of different studies are mixed. It is difficult to compare the results since different methodologies have been used, different measures have been applied in performance evaluation and operational practices vary in different countries (Cerulli & Ventura, 2021). However, we will continue to reflect the findings of various studies, explaining the specifics in each case.

D'Ignazio & Menon (2013) estimated the casual effect of a credit guarantee scheme that was implemented in a big Italian region in 2008 using unique data from a large set of companies. While the existing empirical literature is mostly based on difference-in-differences estimators or on propensity score matching, this study relies on more advanced estimation methods and provides more consistent treatment estimated effects. The results show that the policy was effective as there was noted an improvement in the financial situation of the guaranteed companies. There was no impact on the total volume of bank loans while there was an important increase in the long-term component and a decrease in the interest rates for SMEs. Additionally, the

default probability of guaranteed loans increases, although the effect is only marginally significant. All other variables were unaffected; in particular, it was impossible to find important direct effects on the balance sheets' items, at least in short term.

Another study that analyses the economic impact of the credit guarantee scheeme to SMEs is the one by Asdrubali & Signore (2015), which was conducted in the Central Eastern and South-Eastern European countries during 2005-2012. The results show that, on average, beneficiaries of the credit guarantees have had a notable growth in employment (from 14% to 18%), unlike those that did not have guaranteed loans. A less significant result of the study is noted in the turnover increase (up to 19%) within the first five years of the loan contract signing. The authors question the fact that companies choose to replace their potential profit advantage with a further size advantage, while maintaining or increasing their employment levels, given that an increase in company size is not necessarily followed by an increase in of the profit of SMEs. This study explores country, group, size and age differences. In this respect, a common conclusion with many other studies on CGSs is the relevance of a careful planning phase and accurate implementation for increasing the effectiveness of the programs.

Zecchini and Ventura (2016) provide the first assessment of the impact of the State Fund for guarantees to SMEs in Italy focused on financial stability, credit growth and cost reduction. The CGSs in Italy are as common and diverse, as they form a multi-pillar and multi-layer system based on a mix of private and public funding. This study focuses only on the state guarantee scheme and the results show that the scheme has managed to ease the financing difficulties for SMEs. Econometric tests prove that the public guarantee increases the amount of bank financing for SMEs, although in a limited way due to the small number of government resources. For financed cases, the study also showed a significant reduction in the cost of credit. After, the study of Dvouletý et al. (2018) assessed the effect of CGSs on SME policies in Central and Eastern Europe, as a previously under-addressed topic. The authors focused on two schemes in Czech Republic financed by the EU during the period 2007–2013. The study is based on the propensity score matching approach and measures the competitiveness of firms for up to two years after the guarantee estimates through six financial variables, which are: tangible fixed assets, total assets, personnel costs, sales, price-cost-margin and return on assets. For the period, the results were not statistically conclusive for most of the variables, besides only a positive change in tangible fixed assets. Anyway, in the short term, this analysis cannot conclude that supported firms would be better off compared to unsupported ones. Reliable data collected by public sector authorities are needed to make accurate assessments and thus form the right policies to be applied.

A recent paper by Waniak-Michalak et al. (2022) aims to evaluate the business models of CGSs implemented in 20 countries of EU between 2007 and 2013. The authors concentrate on the financial additionality depending mostly on the management style of the guarantee schemes, their implementation, the setting of objectives and the distribution constraints. The researchers analyze the execution costs and the fund usage allocated for the schemes. There are several methods used to reach the goal (the Kruskal-Wallis by ranks, the median test, discriminant analysis, multidimensional scaling, and correlation) and the power analysis is done as well. The findings show that the efficiency of implemented schemes is related to the level of regional development. This relationship is not visible only when banks are engaged in the implementation, which may be due to the impossibility of assigning a bank's

activities to a single region. Nonetheless, there are no differences found in efficiency between types of organizations that implement the credit guarantee schemes.

CREDIT GUARANTEE SCHEMES IN ALBANIA AND ACTUAL PROFITS

In Albania, the credit guarantee schemes are relatively new because the implementation of the first schemes has started only in recent years. Actually, very little literature exists about the guarantee schemes in our country so far. There are only two reports prepared by the World Bank, where the first one only briefly mentions three active guarantee schemes in 2018 that were set up by different donors to help and support SMEs finance and the second one, more specific, presents an overview of the existing credit guarantee schemes facilities operating in Albania in 2020. CGSs function especially well in highly liquid banking systems, such as in Albania. Compared to direct lending programs, Credit guarantee schemes have a levarage component due to much lower initial cash flow needs compared to direct lending programs (The World Bank, 2020). The first initiative for providing guarantees was a project under the umbrella of the Italian - Albanian Program for the Development of SMEs, which was founded in 2009 by the Project Implementation Unit at the Ministry of Finance and Economy of Albania, in two phases with a total fund of 5 million Euro and was active until the end of 2019. It provided credit guarantees for SME investment projects of goods made in Italy (World Bank, 2018 and 2020).

Another guarantee scheme is the Development Credit Authority (DCA) Guarantee for Agriculture Lending established by USAID Loan Portfolio Guarantee in 2012, with a total fund of 15 million USD. It was a loan portfolio guarantee in partnership with two banks in Albania with the purpuse of increasing the financing of farmers and agribusinesses for expanding and increasing their competitiveness. The coverage rate for the guaranteed loans by DCA loan portfolio and disbursed by the partner banks was 50%. This scheme encouraged bank lending to farmers, who had difficulties in obtaining financing and enabled them to demonstrate the prospective profitability. The scheme was initially planned to operate for 10 years, until September 2022, but the total funds were used before and the last guarantees were provided until 2020. The oldest active scheme with the largest capital for guarantees is applied from the Albanian Development Guaranteee Foundation (ADGF), which is a foundation established since 2015 totally dedicated to providing guarantees. The foundation was formerly known as Rural Credit Guarantee Foundation (RCGF), as it's activity was initially focused only in supporting bussinesses in agriculture and rural arears. Later, in 2019 the focus expanded by adding also the SMEs operating in all sectors of the economy under the scope of coverage for the guaranteed activities. The name change was made effective in 2021 in order to be in line with the mission and vision of the foundation. The idea of the establishment of the foundation was conceived as part of the EU framework of IPA 2012 and the initial project running from 2014 through 2016 was implemented by KfW Development Bank and was supported also by the Ministry of Agriculture and Rural Development in Albania. Until the end of 2022, the guarantee capital of ADGF is 45 million Euro financed from the German Government through KfW Development Bank, which continues to support the Foundation through technical assistance and studies.

The mission of ADGF is to provide access to finance for the underserved micro, small and medium enterprises (MSME) segment in all sectors of the economy due to lack or insufficient collateral, to enable them to either survive or regain some lost

capacity. ADGF pursues its mission through a risk sharing guarantee mechanism with banks for loans disbursed to MSMEs and commercial borrowings of non-banking financial institutions for lending to MSMEs in all sectors of the economy. ADGF implements the guarantee instrument through partnership with 6 banks: for individual and portfolio guarantees directly to businesses, and through agreement with 5 non-banking financial institutions: for commercial borrowings of these institutions by providing guarantees only for the institutions themselves. There are four different windows for the guarantees provided: Regular, Green, Covid and Start-up windows. The coverage ratio for the guarantees varies from 50% to 70% depending on the loan criteria for each window (ADGF, 2021).

Another guarantee scheme is the Albania Agribusiness Support Facility (AASF) implemented by European Bank for Reconstruction and Development (EBRD) since 2016. It was set up under the financing framework developed by EBRD in cooperation and supported by the Government of Albania. The guarantees are provided for the SMEs in the agriculture sector by a portfolio-based risk-sharing instrument covering up to 50% of the portfolio amount of outstanding eligible agribusiness sub-loans and the total capital fund for guarantees is 36 million Euro. AASF has partnership agreements with 4 banks (World Bank, 2020 & AASF, 2021).

After, in March 2020, the Albanian Government launched its first public guarantee scheme called 'the State Guarantee', with the aim of coping with the financial consequences caused by the COVID-19, in order to support the businesses directly or indirectly affected by the pandemic. The project was implemented in two separate guarantee programs by the Ministry of Finance and Economy in Albania and it was active only for a period of two years, until end of 2022. The first program was introduced in April 2020, with a total guarantee of 11 billion ALL to enable lending for affected businesses to pay the salaries of their employees for up to 3 months, when their activity has been closed or affected by reduced turnover. The maximum interest rate for the loan was 2.85 % (subsidized by the Government), the maturity up to 2 years and the coverage ratio 100%. The second program was approved in May 2020, with a total guarantee of 15 billion ALL to provide working capital and investment loans for the affected businesses from the pandemic. The maximum interest rate for the guaranteed loan was 5%, the maturity up to 5 years and the coverage ratio 60% (MoFE, 2022). Meanwhile, in addition to the guarantee scheemes listed above, there are at least also five other scheemes operating in Albania in collaboration with banks. Unlike the others, the particularity is that these schemes are implemented and managed by international guarantee programs that operate more extensively in the region and they actually have a small focus in our country. Briefly summarized, these scheemes are:

-   the EU's COSME Loan Guarantee Facility program: collaborates with 2 banks in Albania and the total guarantee funds as of end of 2022 is 2.2 mln Euro);
-   InnovFin SME Guarantee Facility is managed by European Investment Fund-EIF under Horizon 2020, provides guarantees and counter-guarantees on debt financing and the total guarantee fund is 7.5 million Euro to improve access to financing for innovative SMEs in EU States and Associated Countries;
-   EBRD Trade Facilitation Program: collaborates with 2 banks in Albania;
-   Western Balkan Enterprise and Development Innocation Facility managed by EIF: provides guarantees to financial institutions operating in Western Balkan countries to encourage them to build up new portfolios of SME loans and improve access to finance for SMEs in the region; and

- the European Investment Fund EaSI Guarantee Instrument: provides loan portfolio guarantees for financial intermediaries in microfinance and social entrepreneurship.

Since our paper aims to examine the impact of the credit guarantee for SMEs, it would be worthwhile to present here some key recent features and statistics for these businesses in Albania, that will be considered later for the empirical analyses. SMEs are the largest business segment based on their share of the economy and the contribution to employment and economic growth in Albania. As of 2021, the Albanian Statistical Institute (INSTAT) states that SMEs comprise 99.8% of the enterprises number, 81.6% of the employment, 79% of the net sales, 76.4% of investments and 76.1% of the value added. Although SMEs have dominated and shown their importance in the economy, solving the problems of their access to finance over the years has been tough.

In Albania, the Law no.43/2022 of the Official Gazette (2022) made a reclassification for SMEs. As indicated in the new law, a SME is an enterprise that has less than 250 employes, while its annual net sales revenue or the total balance sheet value for the year should not exceed 250 million ALL. This definition includes MSMEs in Albania with the acronym NMVM. The lack of collateral and guarantees to meet the requirements of banks to finance their activities in Albania is identified as one of the obstacles related to the SMEs. The introduction of the first credit guarantee schemes in recent years is considered a good measure for increasing access to their financing and the vision for the future should focus on the continuation of the increase in access and moreover the extension of the credit guarantee schemes.

RESEARCH METHODOLOGY AND ECONOMETRIC ANALYSIS

The study's database used in this paper is related to secondary data obtained from SME's financial statements for the years ended 2019 and 2021. The sample of SMEs is selected from the database of total portfolio guaranteed by the ADGF during the year 2020. The initial dataset consists of 197 loans guarantees provided to SMEs through five partner banks during that year. Among them, we chose to analyse 50 companies that had received the largest volume of the guaranteed loan , representing 25% of the total portfolio. Out of 50 selected SMEs, there are 43 companies that have completed data valuable for a statistic analysis and econometric model. From the total number of SMEs under analysis, 95% of them were guaranteed only once from ADGF, and for 5% of firms that received more than one guarantee, only the first guarantee is considered. We combine these data with financial information on guaranteed SMEs, collected from the official online database of Albanian businesses (QKB), collecting data for 2019 - as the last year before obtaining the guaranteed loan and for 2021- as one year after the guarantee and at the same time as the last year for which we can get published available data. The two years are chosen to show the condition pre and post the guarantee issue. The scope of our study is limited to only one credit guarantee scheme from the financial system in Albania and data focused on the largest institution established: Albanian Development Guarantee Foundation (ADGF). Also, the period selected to make the comparision and to see the impact is fairly short, due to the short time of history for the institution's guarantee activity. The foundation started providing guarantees for SMEs in various sectors of economy in 2019. Another limitation is the impossibility of providing financial statement data for SMEs that have not declared

them online and moreover, the lack of consistency between the data declared in the bank and in the official online database.

The econometric technique of multiple regression is the model used for assessing the impact of the credit guarantee scheme on SMEs.

The model attempts to establish and estimate the relationship between one dependent variable and several independent variables. All variables are financial indicators of SME's performance (according to certified financial statements) and the generalized form of the multiple linear regression is:

$$= \beta_0 + \beta_1 TA_i + \beta_2 TAR_i + \beta_3 WC_i + \beta_4 EXP_i + \varepsilon_i$$

where,

- o Dependent variable (the main purpose of this study) is explained in table no.1 below;
- o Independent variables (other financial indicators that cause variation in the dependent variable or are the factors that affect it) are also explained in the same table;
- o β_i = regression parameters which estimate the impact of each independent variable on the dependent variable (with constrain "ceteris paribus");
- o ε_i = error term (all other variables that are not involved in the model).

Table 1. Abbreviation and description of the variables in the model

Abbreviation (Used in model)	Description (Meaning of the variables and measurements)	Expectation (effect)
Dependent variable:		
NI	Net Income: also called net earnings, which means sales minus cost of goods sold, general expenses, interest, and taxes.	
Independent variables:		
TA	Total assets: represent the worth of everything the SME owns.	+
TAR	Total Accounts Receivable: are the funds that customers owe the company for products or services that have been sold.	?
WC	Working Capital: is the money available to meet the short-term obligations.	+
EXP	Interest expense: is the cost incurred by SMEs for borrowed funds (especially loans).	-

Source: Authors' summarize.

***Note: All the variables are evaluated based on Albanian Lek (ALL).**

The following assumptions are the main assumptions of the multiple linear regression (Verbeek, 2017):

- linear relationship between the dependent and independent variables;
- independent variables not highly correlated with each other;
- constant variance of the residuals;
- observation autonomy and
- multivariate normality.

After passing all these assumptions with success, the model will be used for study purpose and other explanations related to net income of SME estimations in Albania supported by guarantee scheme for bank loans.

ECONOMETRIC FINDINGS

Understanding the relationship between variables, the link strength and link direction, we estimated the descriptive statistics and correlations, before and after the credit guarantee. Tables no.2 and no.3 below summarize the data of the variables used in our

analysis, respectively at the end of 2019 (for the condition before) and at the end of 2021 (for the condition after).

Table 2. Correlation matrix and descriptive statistics, before the credit guarantee (end of 2019)

	Correlation					Descriptive (in million ALL)	
Variables	NI	TA	TAR	WC	EXP	Mean	St. dev.
NI	1.00					4.66	10.04
TA	0.48*	1.00				49.80	59.06
TAR	0.48*	0.80*	1.00			11.99	30.76
WC	0.67*	0.58*	0.39*	1.00		12.06	21.78
EXP	-0.04	0.22	0.19	0.83	1.00	0.28	0.46

Source: Authors' calculation in EViews 12.

Note: *) for statistical significance level of $p < 1\%$.

As presented in the table, the net income is positively correlated with total assets, accounts receivable and working capital, while the highest value for the mean and standard deviation is noted for the total assets.

Table 3. Correlation matrix and descriptive statistics, after the credit guarantee (end of 2021)

	Correlation					Descriptive (in million ALL)	
Variables	NI	TA	TAR	WC	EXP	Mean	St. dev.
NI	1.00					7.16	14.79
TA	0.74*	1.00				95.49	111.20
TAR	0.58*	0.85*	1.00			28.68	79.98
WC	0.62*	0.61*	0.59*	1.00		16.48	49.32
EXP	0.26	0.58*	0.34*	0.32*	1.00	0.92	1.23

Source: Authors' calculation in EViews 12.

Note: *) for statistical significance level of $p < 1\%$.

This table shows the same direction of correlation for net income respectively with total assets, accounts receivable and working capital, as well as the highest values of total assets regarding mean and standard deviation. Comparing the situation before and after receiving the guaranteed loan, it is noticed that for the SMEs part of the study, the correlation coefficient of the net income with the other 3 indicators keeps the same sign, but it is increased in the situation after the guarantee. Moreover, the values of mean and standard deviation of all the examined variables are also increased after the guarantee. Based on the empirical analysis of the multiple regression model for the financial indicators of SME's performance in Albania, we identify the relationship of the dependent variable *NI* [net income] with the independent variables shown in the table 4.

Table 1. Parametric Estimation Model before the credit guarantee

Dependent variable: NI_i	Coefficient or model parameters	Probability of statistical significance
Constant (in million ALL):	1.72	0.29
Independent variables:		
TA_i	-0.03	0.44
TAR_i	0.13	0.04**
WC_i	0.29	0.00*
EXP_i	-2.20	0.39
Adjusted R^2	47%	
F-statistic	10.37	0.00*

Source: Authors' calculation in EViews 12.

Note: *) for statistical significance level of p < 1% and **) for statistical significance level of p < 5%.

The generalized form of the model before is:

$$NI_i = 1.72 - 0.03TA_i + 0.13TAR_i + 0.29WC_i - 2.2EXP_i + \varepsilon_i$$

The model of performance evaluation of SMEs before receiving a loan that is guaranteed by the scheme, is statistically significant with a significance level of p < 1% and a coefficient of determination of 47% (thus, 47% of the net income assessment is explained by the presence of these factors included in the model). Analyzing each of the evaluated parameters of the variables, we notice:

   o   The variable TAR [Total accounts receivable] has a direct and statistically significant relationship with NI [Net income]. From the parametric evaluation of the model, it is observed that if TAR will increase by 1 million ALL, this brings an increase of 0.13 million ALL in NI. This shows that positive effect of the account receivables on the net income before the guarantee.

   o   The variable WC [Working Capital] has a direct and statistically significant relationship with NI [Net Income]. From the parametric evaluation of the model, it is observed that if WC will increase by 1 million ALL, this brings an increase of 0.29 million ALL in NI. This shows a slightly greater effect of working capital on the net income before the guarantee.

Table 5. Parametric Estimation Model after the credit guarantee

Dependent variable: NI_i	Coefficient or model parameters	Probability of statistical significance
Constant (in million ALL):	-2.39	0.27
Independent variables:		
TA_i	0.15	0.00*
TAR_i	-0.08	0.03**
WC_i	0.09	0.02**
EXP_i	-4.04	0.01*
Adjusted R²	63%	
F-statistic	17.47	0.00*

Source: Authors' calculation in EViews 12.
Note: *) for statistical significance level of p < 1% and **) for statistical significance level of p < 5%.

The generalized form of the model after is:

$$NI_i = -2.39 + 0.15TA_i - 0.08TAR_i + 0.09WC_i - 4.04EXP_i + \varepsilon_i$$

The SME performance evaluation model after receiving the loan guaranteed by the scheme is statistically significant with a significance level of p < 1% and with a coefficient of determination of 63%. Analyzing in particular each of the evaluated parameters of the variables, we notice:

   o   The variable TA [Total Assets] has a direct and statistically significant relationship with NI [Net income]. From the parametric evaluation of the model, it is observed that if TA will increase by 1 million ALL, this brings an increase of 0.15 million ALL in NI. This shows that after receiving the guaranteed loan, the total assets of these companies are increased and the

  loan is used to make new investments, which results in a positive effect on the total income.

o The variable TAR [Total Accounts Receivable] has an indirect and statistically significant relationship with NI [Net income]. From the parametric evaluation of the model, if TAR will increase by 1 million ALL, this brings a decrease (reduction) of 0.08 million ALL in NI. This shows that after receiving the guaranteed loan, the accounts receivable has a negative effect on the net income because more cash is collected.

o The variable WC [Working Capital] has a direct and statistically significant relationship with NI [Net Income]. From the parametric evaluation of the model, it is observed that if WC will increase by 1 million ALL, this brings an increase of 0.09 million ALL in NI. This shows that receiving the guaranteed loan has a positive effect on the increase of the working capital and consequently of the net income.

o The variable EXP [Interest expenses], as an indicator of financial leverage, has an indirect and statistically significant relationship with NI [Net income]. From the parametric evaluation of the model, it is observed that if EXP will increase by 1 million ALL, this brings a decrease (reduction) of 4.04 million ALL in NI. This shows that the new loan has increased the interest expenses and as it is expected, the increase of expenses will decrease the income, as an immediate and a short time effect after receiving the loan, which gives its benefits in a slightly longer term.

To better understand how the credit guarantee scheme has had an effect on obtaining loans, providing the possibility of financing for SMEs, we will give below a representation of the change in the parameters of the model according to the independent variables:

Table 6. Parametric difference of the model before and after the credit guarantee

Independent variables:	Before guarantee (β)	After guarantee (β^*)	Difference:	
			$\Delta = \|\beta - \beta^*\|$	Sign
TA_i	-0.03	0.15	0.18	+
TAR_i	0.13	-0.08	0.21	-
WC_i	0.29	0.09	0.20	-
EXP_i	-2.20	-4.04	1.84	-

Source: Authors' calculation in EViews 12.

The difference in absolute value shows the magnitude of the change from before to after, which is the highest for the interest expenses and smaller for the other three variables. Meanwhile, the sign shows the direction of the change, whether it is increasing (+) or decreasing (-). For example, interest expenses has caused a decrease in the parameter from the model before the guarantee to after by 1.84 times, that is, when the guarantee scheme is applied, the impact of the financial costs of interests or financial leverage increases significantly and the effect on the reduction of the net income increases by a coefficient of 1.84 (so if the interest expenses increase by 1 million ALL after receiving the guaranteed loan, this results in the additional reduction of 1.84 million ALL in net income).

Table 7. Analysis of the Residual

The test	Description of hypothesis	Test result	
		Before guarantee	After guarantee
Multicollinearity: VIF-test (Variance Inflation Factors)	Null hypothesis (H_0): model does not have multicollinearity	According to the VIF: VIF < 10 do not reject H_0	According to the VIF: VIF < 10 do not reject H_0
Heteroskedasticity: Breusch-Pagan Godfrey-statistic	Null hypothesis: model does not have heteroskedasticity	According to the Ch-square, $p < 1\%$, reject H_0	According to the Ch-square, $p < 5\%$, do not reject H_0
Normality of the residual distribution εt: Jarque-Bera-test	Null hypothesis: the residual of the model has normality distribution.	Ch-square, $p < 1\%$, reject H_0	Ch-square, $p < 1\%$, reject H_0

Source: The table summarizes the tests once they were proceeded EViews 12 by the authors

The model after the credit guarantee has successfully passed the main assumptions of the Gauss-Markov theorem (table no.7), hence the model is statistically useful to explain the direction and strength correlations of the variables in the log-term period.

CONCLUSIONS

Credit guarantee schemes are present in various economies all over the world and are used as an effective instrument for enhancing the access to financial assets for businesses facing financial difficulties, especially SMEs. These schemes are usually funded by public institutions, different organizations or financial institutions, and their implementation is frequently listed among the policy recommendations of international organizations. A CGS, as a financial intermediary, enables the connection between the bank, which is the money lender and the business which needs financing. Since SMEs are not easily approachable by the banks, due to informality and information assimetry, these scheemes fulfill their mission by improving the access to finance for SMEs.

CGSs offer banks the opportunity to share the credit risk with them in a certain percentage, thus increasing the willingness of the banks to approach businesses. By reducing the risk for banks related to lending to SMEs, credit guarantees try to bring lenders closer to this market segment and start a learning process through which banks develop the knowledge and technology to make lending in small amounts profitable, being that they are more inclined towards big businesses and corporations. Obtaining finance for working capital, investments or leasing enables small and medium enterprises to improve their competitiveness and expand their economic activity.

CGSs are of different typologies and there is a wide literature on their history, organization, effects in different countries of the world. Meanwhile in Albania, since these schemes were introduced and applied for the first time only in the last few years, the literature is poor in this direction. We chose to give an overview of the CGSs that exist in our country and we focuse further on the study of the impact on one of the schemes that is considered the largest.

In this paper we evaluate the effectiveness of one credit guarantee scheme in Albania, using data from a selected group of guaranteed SMEs. In order to study the impact of the credit guarantee in the financial performance of SMEs, we use the multiple regression analysis. Using variable estimations based on the difference of the linear multiple regression functions before and after receiving the guaranteed loan, we are able to identify the effect of the guarantee on the net income by analysing a number of financial variables that are effected from the loan, such as: total assets, total

accounts receivable, working capital and the interest expenses - in the second year after receiving the guarantee.

We find that total assets and working capital have a positive effect on the net income of the SMEs that received a guaranteed loan. On the other hand, the accounts receivable and the interest expenses have a negative effect on the net income of these companies. To our knowledge, there is no other study made in Albania until now to evaluate the impact of a guarantee scheme on SMEs, therefore these empirical results are the first and there are no other findings of this nature to compare.

The findings of our study confirm that, regardless of the short time as a limitation of our paper, there is an impact of the credit guarantee in the performance of the SMEs in Albania. In this regard, additional research is needed in the following years for this scheme as well as other schemes operating in the country; research extended also to other financial variables, in order to give a more precise picture about the influence of credit guarantee schemes on bank lending to SMEs. The study provides the analysis of the credit guarantee scheeme in the financial performance of the beneficiaries SMEs and promotes the development of these financial intermediaries in Albania. Moreover, it brings the importance of the guarantee scheemes to the academic debate and to the agenda of policymakers and regulatory financial institutions.

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