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EDITORIAL

In the first issue of our journal, in the ninth year of publishing, we present seven papers on different topics. The SMS's business performance is analyzed in the correlation of different owners' characteristics while the factors affecting non-performing loans in the Baltic States are shown based on World Bank statistics. The impact of government expenditures on economic growth in Ethiopia is discussed based on annual time series data from 1991 to 2016. In the case of Rumania, poverty is seen as an important social and economic factor, affecting a large part of the population, that requires effort for specific forms of social assistance. Analysis of the involvement of institutional investors in the corporate governance of companies in their portfolio includes the characteristics of institutional investors concerning the type of investment, investment time horizon, and degree of involvement in the process of managing a company. A very interesting idea is an attempt of creating and designing sustainable management on the global level. The link between stock market performance and manufacturing growth in Nigeria, using data spanning between 1985 and 2020, is the content of the last paper in this issue.

In this issue, we use the international system DOI (Digital Object Identifier) of the Crossref Registration Agency, with the help of the Croatian National Library. Through this cooperation, we hope to increase our authors' visibility in the academic environment.

The Editor,
Marijan Cingula

Deepening the dialogue on SME business performance: Are there non-linear effects as well?

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ABSTRACT

Studies analyzing the business performance of small and medium-sized enterprises are high in number and importance. Throughout the years, a vast number of variables have been introduced to explain what causes the observed difference in the business performance of small and medium-sized enterprises. However, many previous studies looked at only linear effects of such variables, while neglecting potential non-linear aspects. This study tried to fill that gap in the literature by using both linear and quadratic effects of well-established variables in the literature. By using linear regression on a sample of 245 small and medium-sized enterprises, this study reports that entrepreneurial experience has a significant quadratic effect, while gender has a significant linear effect on business performance. Based on the employed methodology and results, limitations of this study and avenues for future research were outlined.

Keywords: entrepreneurship, SME, business performance

1. INTRODUCTION

Entrepreneurship plays an important role in national and regional economic development, and this role has been widely studied from various perspectives since the original contributions from Schumpeter (1934). The hypothesis that innovative entrepreneurship influences economic development has been spelled-out in many scientific studies (Müller, 2016). Findings of such sort give extra weight to research on the antecedents of entrepreneurial business performance because the results have multiplying effects for various economic actors, not only the primary subjects of the research, namely entrepreneurs. Pushing such important research forward was the primary motivation for writing this paper. By looking at the research conducted on entrepreneurial business performance, one can see that the majority of research examined only linear effects of the proposed relations between selected variables. There are reasons to suspect that in many cases such relations will not hold and that the examination of non-linear effects is needed (Pierce and Aguinis, 2013). Herein lies the main contribution of this study. In other words, this paper examined the classical factors that were used to explain the business performance of small and medium-sized enterprises (SMEs) from a linear and non-linear aspect to achieve a more nuanced view and explain some tensions that were found in the literature. Research questions can be specified as:

RQ1: What factors have a linear effect on SME business performance?

RQ2: What factors have a non-linear effect on SME business performance?

To answer these research questions, multiple linear regression was utilized on data from an online survey was sent to SMEs from Croatia. The results from the regression analysis show that gender had a significant linear effect on business performance, that is male-owned SMEs had higher business performance than female-owned SMEs. Furthermore, entrepreneurial experience had a non-linear impact on business performance. More specifically, this effect is upward U-shaped. Other factors were not significant predictors of business performance. The structure of the article is as follows. The next section presents a literature review and the developed hypotheses. Section three displays the used methodology, while section four shows the results of the analysis. Lastly, section five gives the concluding remarks.

2. LITERATURE REVIEW

Entrepreneurial experience

The first antecedent of SME performance that will be analyzed is entrepreneurial experience. Entrepreneurial experience is a part of the human capital construct that supports the creation of economic value that is acquired through numerous and diverse experiences. More specifically, it is the part of the human capital investment (alongside for instance education that will be discussed later in the paper) rather than the outcome of investment in human capital (such as a defined set of skills) (Becker, 1964). Whether or not this aspect of human capital has any relation with business performance has been studied extensively. In the early years of entrepreneurial scientific research. For instance, Stuart and Abetti (1990) discovered a positive correlation of entrepreneurial experience with firm performance and MacMillan et al. (1985) found that venture capitalists regard entrepreneurial experience as a significant factor when predicting firm performance. One way of explaining these findings is to postulate that novice and inexperienced entrepreneurs have a hard time generalizing insights from previous experiences. Because they do not grasp the full complexity of the entrepreneurial situation (Simon, 1978), novice and inexperienced entrepreneurs inaccurately interpret the present circumstances in light of limited previous experience (Levitt and March, 1988) which leads to suboptimal solutions (Mazur, 1994). As more research was done through the upcoming years, more elaborated reasons were given to explain the importance of entrepreneurial experience, and causal methods were mostly utilized instead of correlation analyses. One notion has been particularly important in this strand of research, and that is that learning is rightly obtained by experience. In other words, scholars have put forward the notion that learning-by-doing is an essential part of a successful entrepreneurial journey (Baum et al., 2011; Minniti and Bygrave, 2001). By way of this process, entrepreneurs are more alert to entrepreneurial opportunities (Westhead et al., 2005) and have a better understanding of causal effects between various entities (Cressy, 1992) that ultimately leads to the procurement of valuable resources (Gompers et al., 2010). Furthermore, more entrepreneurial experience leads to more sophisticated business planning procedures (Burke et al., 2010) and outcomes which in turn has a positive effect on business performance (Kraus et al., 2008). Taking all the arguments together, Hypothesis 1 is stated as follows.

Hypothesis 1: Entrepreneurial experience has a positive effect on business performance.

Age of the firm

The age of the firm has also been elaborately studied in the entrepreneurship field. As was the case with entrepreneurial experience, learning processes play a key role in explaining the positive effects of the age of the firm on business performance (Stinchcombe, 1965). Learning mechanisms, which can improve over time, can decipher the benefits and drawbacks of various parts of a functioning firm as well opportunities and barriers in the external environment (Bahk and Gort, 1993). In addition, the mission or the identity can crystalize and be more apparent as business operations continue (Jovanovic, 1982). Further arguments can be made that the more the business matures the overall performance will be better. One such argument, which is frequently used in the scientific literature is the liability of newness. Younger firms are faced with specific challenges that older firms do not have to resolve and those problems are what cause failure in younger firms. For example, entrepreneurs regularly have to make business decisions that will significantly affect the future operations of the firm. Since younger firms do not have the experience and formal infrastructure to handle complex decision-making processes (Bantel, 1998), there is too much burden on the cognitive abilities of the solo entrepreneur or the entrepreneurial team. The results of this problem are substandard business decisions. Liability of newness can also hamper the ability of younger firms to bring in more financial resources because financial institutions do not have the confidence to invest in such firms (Rafiq et al., 2016). Furthermore, younger firms have no or have very limited ability to exploit economies of scale (Barrett and Mayson, 2007) and are less efficient in operations than older firms (Nguyen et al., 2015). From all of the above, Hypothesis 2 follows.

Hypothesis 2: The age of the firm has a positive effect on business performance.

Age of the entrepreneur

The age of the entrepreneurs is likewise a well-studied variable in the business performance context and many reasons can be provided that show that older entrepreneurs should have a business advantage in comparison to young entrepreneurs. Firstly, the age of an entrepreneur can be considered as part of the pool of human capital factors (Becker, 1962). Given their age, older entrepreneurs are more likely to have higher levels of relevant experience which gives them the ability to better access relevant business information, better process the gathered information, and make valid business decisions (Wiersema and Bantel, 1992). Lack of knowledge and information processing hinders the ability of younger entrepreneurs to carry out innovative activities (Azoulay et al., 2019). Ultimately, all of this can lead to more business success for older entrepreneurs (Gielnik et al., 2018). They are also more likely to avoid common cognitive biases. In other words, older entrepreneurs are less prone to overconfidence (Forbes, 2005) which enables them to assess their abilities more objectively (Baron et al., 2016). The importance of networking can be outlined as another advantage of older entrepreneurs. Social capital is very important for conducting business (Stam et al., 2014) and older entrepreneurs are better suited to take extract value from such capital (Baucus and Human, 1995). Lastly, older entrepreneurs have more access to funding opportunities. For instance, young entrepreneurs have problems getting bank loans because they do not have a long bank history, if they have it at all, and they do not have sufficient collateral (Rector et al., 2016). From the preceding discussion, Hypothesis 3 is formulated.

Hypothesis 3: The age of the entrepreneur has a positive effect on business performance.

Gender

Current entrepreneurial research has greatly improved our understanding of the specific circumstances that women face when founding and running their own ventures. Unfortunately, this research has uncovered numerous obstacles for women in an entrepreneurial setting which causes their ventures to have lower business performance than their male counterparts. One reason is that women have a harder time getting financial resources for their firms. Generally, women have lower access to external financing (Carter and Rosa, 1998) and more specifically lower access to bank credits (Coleman, 2007; Watson, 2002). When getting bank loans, women are obligated to put more collateral to obtain a loan (Coleman, 2000). What is even more troubling is that there are strong indications that the reason for lower access to these funds is caused by discrimination in the internal procedures of the financial institutions (Fay and Williams, 1993). Next, women tend to establish their ventures in lower-profit industries (Loscocco and Robinson, 1991). Female-owned enterprises mostly operate in retail and service industries (Bates, 1995; Du Rietz and Henrekson, 2000). Furthermore, female entrepreneurs differ from male entrepreneurs in the reasons for becoming entrepreneurs. Women enter into entrepreneurship to gain non-monetary benefits, such as independence (Carter et al., 2003). This does not imply that women entrepreneurs do not want to achieve high profits, but that high profits sometimes are not the primary goal. This statement is also evident from the fact that women see entrepreneurship as means to spend more time at home and improve family relations (Parasuraman and Simmers, 2001). The importance of the balance between family and work for women entrepreneurs stems also from the finding that women entrepreneurs prefer ventures that can be managed from their homes (Fasci and Valdez, 1998). Lastly, women have higher risk aversion levels (Jianakoplos and Bernasek, 1998) which can cause them to underinvest in innovative projects. In conjunction, Hypothesis 4 is stated as follows.

Hypothesis 4: Male-owned firms will have higher business performance than female-owned firms.

Education level

The last variable that will be analyzed is the education level of the entrepreneur. Alongside the entrepreneurial experience and age of the entrepreneur, education is also considered part of the human capital theory (Becker, 1964). This is important for this study because it provides the first reason why higher education levels should lead to higher business performance. According to human capital theory, individuals demand or try to achieve reimbursements for investments in themselves. Therefore, entrepreneurs with higher education levels more

eagerly strive to accomplish higher business performance measures (Cassar, 2006). Besides the postulates of human capital theory, more direct reasons for the better business performance of higher educated entrepreneurs can be found in the scientific literature. Entrepreneurs are not constrained in their business activities as are formal employees. Therefore, they can more freely align the direction that they want to business to evolve with their acquired education outlook (Van Praag et al., 2013). In addition, higher education levels help to improve general skills that help the entrepreneur to run the business more efficiently and effectively, such as communication and teamwork. Higher education also causes entrepreneurs to better fine-tune many critical aspects of their business (Sinha, 1996). Moreover, the process of resource gathering is more painless for higher educated entrepreneurs given it influences their managerial skills (Soriano and Castrogiovanni, 2012). Finally, education affects the cognitive states of entrepreneurs. What is meant by the previous statement is that education can increase an important antecedent of business performance, the self-confidence of the entrepreneur (Jiménez et al., 2015). The discourse above leads to Hypothesis 5.

Hypothesis 5: The education level of the entrepreneur has a positive effect on business performance.

Non-linear effects

Curvilinearity is a phenomenon that occurs in various business disciplines but that has not received enough scientific attention. The basic idea is that at some point in many relations between variables the benefits will outweigh the costs of utilizing an antecedent variable resulting in positive/negative effects on higher/lower levels or in positive/negative effects on middle levels (Pierce and Aguinis, 2013). The benefit of this postulate is that non-linear relations can help explain why some research detected the opposite signs of the effects of all factors that were previously displayed. For instance, the more entrepreneurial experience can harm business performance (e. g. Tornikoski and Newbert, 2007). One logic behind those results is that failure, as an integral part of the learning-by-doing process, can hamper the possibilities of gathering valuable resources (Hsu, 2007). As for the age of the firm, there is theoretical and empirical evidence that younger firms have higher business performance. Older firms can experience organizational inertia because high-ranking individuals do not challenge common beliefs, investment projects with higher risks are not taken and there is overdependence on established procedures (Finkelstein and Hambrick, 1990). The third variable of consideration is the age of the entrepreneur as there is evidence that younger entrepreneurs have advantages over older entrepreneurs. Older entrepreneurs have a harder time developing technical skills and comprehending new business ideas (Gist et al., 1988; Hambrick and Mason, 1984). Older entrepreneurs also have a lower tolerance for risk (Vroom and Pahl, 1971) which can lead to less innovative business activities. Gender and education were excluded from this analysis because of the nature of those variables. Three hypotheses flow from this analysis.

Hypothesis 6: Entrepreneurial experience has a non-linear effect on business performance.

Hypothesis 7: The age of the firm has a non-linear effect on business performance.

Hypothesis 8: The age of the entrepreneur has a non-linear effect on business performance.

3. METHODOLOGY

The data for this study was gathered by using an online questionnaire that was distributed to SMEs operating in Croatia. Entrepreneurs that managed an SME filled out the survey in 2020. The total number of responses was 245. All the questions were answered by the entrepreneurs because of the restrictive nature of the online survey. Therefore, there was no issue with the missing values. The next step consisted of checking for unengaged respondents. Since none of the entrepreneurs filled out the questionnaire below the estimated minimum required time, no surveys were excluded. With regards to the operationalization of variables, *entrepreneurial experience (ENEX)* has been conceptualized in many ways. It can refer to the number of ventures that the person has founded, the number of years that the person has been an entrepreneur in all firms during his/her lifespan, or the number of years that the person has been an entrepreneur in the current firm (Burke et al., 2018).

For this study, entrepreneurial experience is measured using the total number of years the person has been an entrepreneur (including time spent in other firms besides the current firm). The next three variables are more or less straightforward. *Age of the firm (FIAG)* reflects the time that has passed since the founding of the firm, *age of the entrepreneur (ENAG)* is the variable that tells how old is the entrepreneur, and *gender (GEND)* is a dummy variable that has a value of 1 if the entrepreneur is male and has a value of 0 if the entrepreneur is female. *Education (EDUC)* was measured on a scale of 1-8 in line with the Croatian qualification framework. Lastly, the content of the entrepreneurs with their *profit margin (PERF)*, in comparison to the competition, on a scale 1-5 was used to approximate business performance.

4. RESULTS

The descriptive statistics of the variables can be found in Table 1.

Table 1. Descriptive statistics of variables

	VIF	Mean	Std. Dev.	Min.	Max.
PERF	-	3,526	1,051	1	5
ENEX	1,98	14,697	9,329	0	43
FIAG	1,13	19,689	14,154	0	130
ENAG	1,95	48,159	10,138	26	75
GEND	1,04	0,673	0,469	0	1
EDUC	1,01	6,138	1,658	1	8

Source: Compiled by the author

To test the mentioned hypotheses, multiple linear regression with robust standard errors was employed. But before proceeding to the results, diagnostic tests were performed. Variance inflation factors (VIF) of all the variables were below 5, shown in Table 1, meaning that there were no issues of multicollinearity. Also, the Ramsey Reset test ($F=0,57$, $p\text{-value}=0,632$) showed no signs of omitted variables. The correlation matrix is displayed in Table 2 and the results of the model are in Table 3.

Table 2. Correlation matrix

	<i>PERF</i>	<i>ENEX</i>	<i>FIAG</i>	<i>ENAG</i>	<i>GEND</i>	<i>EDUC</i>
<i>PERF</i>	-					
<i>ENEX</i>	-0,129**	-				
<i>FIAG</i>	-0,067	0,308***	-			
<i>ENAG</i>	-0,1346**	0,685***	0,316***	-		
<i>GEND</i>	0,092	0,158***	0,081	0,032	-	
<i>EDUC</i>	0,061	-0,025	-0,029	-0,001	-0,057	-

Source: Compiled by the author.

*** means significant at 1% level, ** means significant at 5% level, * means significant at 10% level.

Table following on the next page

Table 3. Regression results (dependent variable: *PERF*)

	(1)	(2)
<i>ENEX</i>	-0,105 (0,011)	0,075*** (0,025)
<i>FIAG</i>	-0,001 (0,005)	0,007 (0,011)
<i>ENAG</i>	-0,006 (0,009)	-0,011 (0,009)
<i>GEND</i>	0,257* (0,145)	0,281** (0,142)
<i>EDUC</i>	0,041 (0,041)	0,041 (0,039)
<i>ENEX</i> ²	-	-0,002*** (0,000)
<i>FIAG</i> ²	-	-0,001 (0,001)
<i>ENAG</i> ²	-	0,000 (0,000)
<i>R</i> ²	0,032	0,094
<i>N</i>	245	245

Source: Compiled by the author

*** means significant at 1% level, ** means significant at 5% level, * means significant at 10% level.

The results from Table 3 show that the linear effect of entrepreneurial experience is not statistically significant leading to the rejection of Hypothesis 1. However, in the second model, both the linear and the quadratic effect were statistically significant so Hypothesis 6 is accepted. Given that the linear effect is positive and that the quadratic effect is negative, entrepreneurial experience has an upward inverted U-shaped effect on business performance. Next, firm age had no significant linear or quadratic effect entailing the rejection of Hypothesis 2 and 7. The same holds for entrepreneurial age, meaning that Hypotheses 3 and 8 are also rejected. Another variable had non-significant effects on business performance, namely education levels. Therefore, Hypothesis 5 is rejected. Lastly, gender had proven to be a significant antecedent of business performance in both models. Accordingly, Hypothesis 4 is accepted.

5. CONCLUSION

This study tried to explain the business performance of SMEs using a standard linear approach and supplement it with a non-linear analysis as well. Firstly, a literature review of all the used factors was presented to support eight hypotheses. These hypotheses were tested using a methodology that was described after the literature review. Afterward, the results of the regression analyses were reported that were carried out on a sample of 245 firms. From these results, it follows that entrepreneurial experience had an upward sloping U-shaped effect on business. The second significant variable is gender. Male-owned firms had higher levels of business performance than their female counterparts. In contrast to entrepreneurial experience, this result is adverse because this points to the existence of many structural obstacles that women entrepreneurs encounter during their entrepreneurial careers. As is the case in any scientific research, there were limitations. The nature of the sample data was cross-sectional, meaning that higher-order causality could have been established using longitudinal data. Second, some scarcity is present in the number of utilized variables in the regression analysis. Therefore, there is the possibility that not all causal effects were controlled for. Finally, future research could improve on this study and expand our understanding of SME business performance.

Future studies could analyze other non-linear effects, such as cubic effects, to provide an even more detailed outlook of this topic. Other authors could also test broaden the model by employing various moderating and mediating effects.

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Comparative analysis of non-performing loans affecting factors in the Baltic States

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ABSTRACT

The deterioration of the economic situation during Covid-19 has raised the issue of the quality of banks' assets and in particular the growth of non-performing loans (NPL). This is a topical issue not only for banks that, in this context, incur additional costs for allowances and capital requirements but also for society as a whole, as credit availability is likely to be reduced. The Baltic States experienced a particularly severe financial crisis in 2008-2009, resulting in a rapid increase in NPLs. This study analyses the factors affecting NPLs in the Baltic States, using information available from WB, Eurostat, and econometrical modeling methods. The results of the study allow conclusions to be drawn on the necessary actions to mitigate credit risk.

Keywords: *non-performing loans, influencing factors, comparative analysis.*

1. INTRODUCTION

Over the last twenty years, the Baltic States have undergone significant structural changes in their economies and financial systems: in the first half of the first decade, with the approach of EU accession, there was a rapid inflow of foreign investments, real estate market development and a commercial bank credit boom. With the onset of the global financial crisis, the real estate price bubble burst, followed by bankruptcies of both companies and households. Although the dynamics of GDP in the Baltic States were relatively similar, the changes in non-performing loans, as shown in Figure # 1, differed significantly. The question, therefore, arises as to what factors may explain these differences.

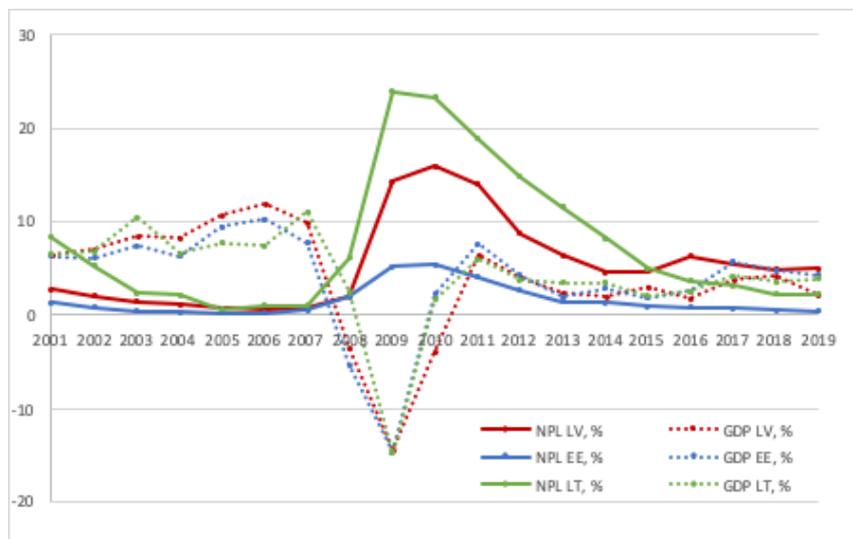


Figure 1. NPL and GDP growth dynamic in the Baltic States

2. LITERATURE REVIEW

Macroeconomic conditions form a link between the business cycle and lending, as environmental changes directly affect the borrower's ability to service debt. For example, research has often found that GDP growth shows a negative correlation with NPLs, indicating a countercyclical nature of NPLs (Louzis, 2012; Jakubik,

2013; Makri, 2014; Skarica, 2014; Beck, 2015; Cifter, 2015, Cucinelli, 2015; Tanaskovic, 2015; Dimitrios, 2016; Gila-Gourgoura, 2017; Kupcinskias, 2017; Peric, 2017; Koju, 2018; Ozili, 2019; Radivojevic, 2019).

With rising unemployment and falling wages, which are typically seen in times of economic downturns, borrowers face greater difficulties in repaying their debt, and, as a result, NPLs increase. Many researchers explicitly include unemployment in their models and find strong positive relationships between unemployment and NPLs (Louzis, 2012; Makri, 2014; Skarica, 2014; Cifter, 2015; Cucinelli, 2015; Dimitrios, 2016; Koju, 2018; Kupcinskias, 2017; Spilbergs, 2020). In addition to the above, the following are also considered to be important determinants of NPLs:

- inflation, since its growth reduces real wages and hence the ability to meet liabilities. This is particularly important in circumstances where inflation exceeds wage growth (Skarica, 2014; Filip, 2015; Koju, 2018);
- variable interest rates, which directly affect the ability of borrowers to pay interest, especially when the proportion of variable rate loans is significant (Louzis, 2012; Beck, 2015; Peric 2017);
- the house price index - falling house prices are tightly linked to higher default rates (Beck, 2015);
- foreign direct investment, the growth of which is usually conducive to economic growth and thus has a positive impact on NPLs (Cifter, 2015; Koju, 2018).

3. CORRELATION ANALYSIS OF NON-PERFORMING LOANS AN POTENTIAL INFLUENCING FACTORS

Based on the literature analysis, 18 factors were selected that could potentially influence changes in NPLs. Using World Bank data on non-performing loan ratios from 2001 to 2019 and Eurostat data on selected factors, a list of the top 10 by correlation was created, see Table # 1, to which the coefficient of variation (CV) of the studied indicator is added in the last column. As can be seen, the values of the correlation coefficients of several factors are quite similar for all analyzed countries, such as unemployment (UPL), GDP, and net wage growth (NWG), while for others, such as the long-term interest rate (LTR), coefficients of correlations vary very significantly. Consequently, the question arises as to whether the Baltic States can be considered homogeneous from the point of view of the factors influencing NPLs.

To answer this question, NPL regression models were developed for each of the Baltic States separately and then the possibilities to improve them by developing unified models were explored.

Factor	Estonia	Latvia	Lithuania	CV
Household disposable income growth, %	-0,8112	-0,8857	-0,6934	12%
Unemployment rate – annual, %	0,7250	0,7640	0,7287	3%
Private sector debt: loans, % of GDP	0,6785	0,7066	0,4686	21%
Net wages growth rate, %	-0,6534	-0,7567	-0,7465	8%
Construction costs growth, %	-0,6334	-0,5199	-0,7042	15%
GDP growth rate, %	-0,5898	-0,6705	-0,6412	6%
Household debt, % of GDP	0,5720	0,5382	0,4585	11%
House price index, % annual	-0,5369	-0,5891	-0,8005	22%
Investments to GDP, %	-0,4937	-0,6510	-0,6796	16%
Loans growth to GDP growth	-0,3612	-0,6285	-0,5040	27%
Long-term interest rate, %	0,1709	0,4543	0,6079	54%

Table 1. Correlation coefficients of selected factors and NPLs by countries

4. THE MODEL AND RESULTS

Let NPL_t be the dependent variable 'non-performing ratio' in year t . Further, let x_{1t}, \dots, x_{kt} denote independent variables and b_{1t}, \dots, b_{kt} denote regression coefficients of independent variables, then the model can be expressed as in equation:

$$NPL_t' = f(x_{1t}, \dots, x_{kt}) + \varepsilon_t$$

where ε_t – the error term.

During the research, combining the selected factors, more than a hundred linear and non-linear regression models were calibrated for each country and Baltics. To select the best fit from the compiled models, three tests were performed:

- 1) F-test to assess the statistical stability of models at a confidence level of 0,95 ($\alpha = 0,05$);
- 2) Durbin-Watson test to detect the presence of autoregression at a confidence level 0,95 ($\alpha = 0,05$);
- 3) t-test for estimation of statistical stability of regression parameters at a confidence level 0,95 ($\alpha = 0,05$).

4.1 REGRESSION MODELS AND RESULTS FOR ESTONIA

For Estonia, three linear and two polynomial models provide the best fit to the selected data. The most common factors in created regression models are household disposable income growth, % (HDI), private sector debt, loans % of GDP (PSD), unemployment rate, % annual (UPL) and net wages growth rate, % (NWG), which corresponds to the previous correlation analysis. The following figure shows the relationships between HDI, UPL, and NPLs. As can be seen, the relationships are nonlinear in both cases. As HDI increases, NPLs decrease, and for negative HDI values, NPLs increase faster than for positive ones. On the other hand, with the increase in the UPL, the NPL also increases, and for higher unemployment rates, the increase in the NPL is faster.

The factors and statistics of the five best-fit regression models are summarized in Table 2. As can be seen, the best of the developed regression models allows explaining the absolute

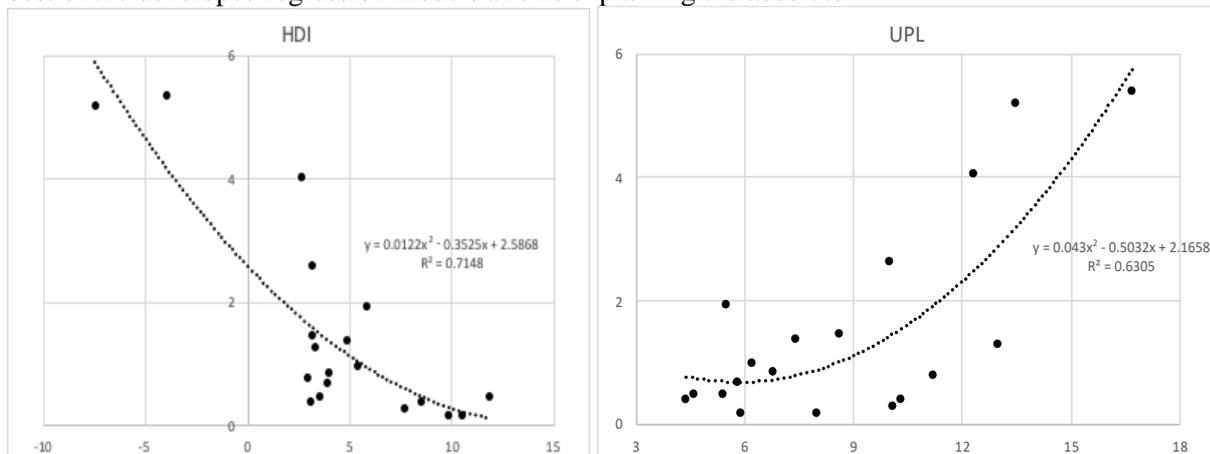


Figure 2. HDI, UPL, and NPL relationships for Estonia

majority of the changes in NPLs. Thus, for example, the linear model with three factors - HDI, UPL, and LtGDP - allows explaining ca. 94,5% of NPL changes in the case of Estonia.

Model type	Factors	R ²	F	p - value
Linear 1	HDI, UPL, LtGDP	0,9446	85,1874	<0,01
Linear 2	UPL, PSD	0,9249	98,5646	<0,01
Linear 3	PSD, HDI	0,8168	35,6656	<0,01
Polynomial 4	HDI	0,7148	20,0533	<0,01
Polynomial 5	NWG	0,6988	18,5637	<0,01

Table 2. Best five fitted regression model factors and statistics for Estonia

As shown in Table 2, the *F*-statistics are significantly higher than the *F*-critical values at a confidence level of 0,95 ($\alpha = 0,05$) and the *p*-values are significantly lower than those traditionally used in such tests, indicating high statistical stability of all models.

The following table summarizes the results of the regression coefficient *t*-tests of the selected five models.

Model	Factors	Regression coefficient	<i>p</i> - value
Linear 1	HDI	-0,1149	0,0918%
	UPL	0,2219	0,0013%
	LtGDP	0,0799	0,0001%
Linear 2	UPL	0,3465	0,0000%
	PSD	0,0458	0,0000%
Linear 3	PSD	0,0764	0,0229%
	HDI	-0,2108	0,0076%
Polynomial 4	HDI	-0,3525	0,0024%
	HDI ²	0,0122	4,6686%
Polynomial 5	NWG	-0,7232	0,3556%
	NWG ²	0,0063	0,1307%

Table 3. Best five fitted model regression coefficients and statistics for Estonia

As one can see, the regression coefficients *t*-test *p*-values for all top 5 models do not exceed 5% and for 10 of total 11 are less than 0,5%, indicating a strong relationship between relevant macro indicators and NPLs for Estonia. Meanwhile, the regression coefficient signs are as expected and consistent with those reported in most published studies.

4.2 REGRESSION MODELS AND RESULTS FOR LATVIA

For Latvia linear and one polynomial models provide the best fit to the selected data. The most common factors in created regression models are net wages growth rate, % (NWG), household disposable income growth, % (HDI) and private sector debt, loans % of GDP (PSD), which corresponds to the previous correlation analysis. The following figure shows the relationships between HDI, UPL, and NPLs. As can be seen, the relationships are nonlinear in both cases and similar to Estonians.

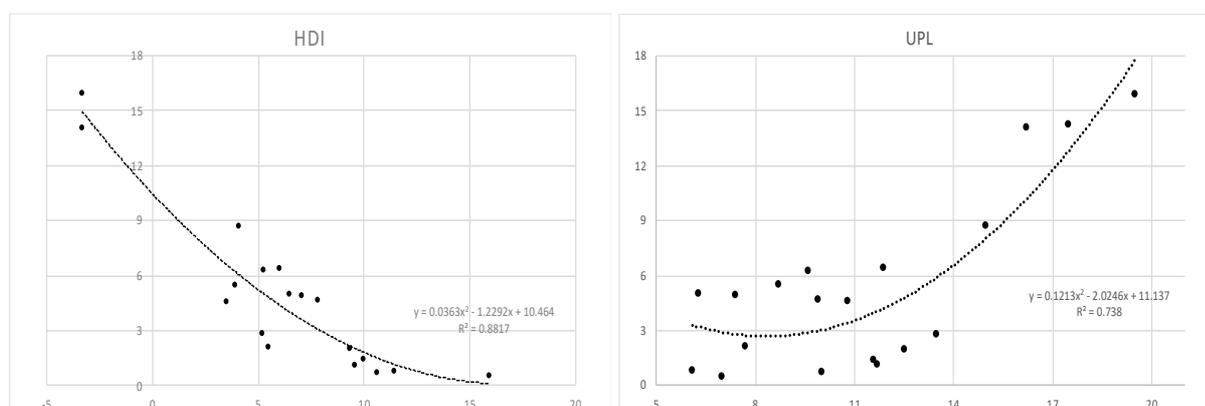


Figure 3. HDI, UPL and NPL relationships for Latvia

The factors and statistics of the five best-fit regression models are summarized in Table 4.

Model type	Factors	<i>R</i> ²	<i>F</i>	<i>p</i> - value
Linear 1	NWG, HDtI	0,9288	104,3294	<0,01
Linear 2	NWG, HDtGDP	0,9116	82,5246	<0,01
Linear 3	NWG, PSD	0,9101	80,9617	<0,01
Polynomial 4	HDI	0,8817	55,9184	<0,01
Linear 5	HDI, PSD	0,8563	44,6982	<0,01

Table 4. Best five fitted regression model factors and statistics for Latvia

As can be seen, the best of the developed regression models allows explaining the absolute majority of the changes in NPLs. Thus, for example, the linear model with two factors – NWG and household debt to income, % (HDtI) - allows explaining ca. 92,9% of NPL changes in the case of Latvia. Unlike in Estonia, the coefficients of determination of the following regression models are also high, which gives a wider choice in case of necessity. As shown in Table 4, the *F*-statistics are significantly higher than the *F*-critical values at a confidence level of 0,95 ($\alpha = 0,05$) and the *p*-values are significantly lower than those traditionally used in such tests, indicating high statistical stability of all models. The following table summarizes the results of the regression coefficient *t*-tests of the selected five models.

Model	Factors	Regression coefficient	<i>p</i> - value
Linear 1	NWG	-0,4338	0,0000%
	HDtI	0,1402	0,0000%
Linear 2	NWG	-0,4168	0,0000%
	HDtGDP	0,2105	0,0000%
Linear 3	NWG	-0,3437	0,0000%
	PSD	0,2126	0,0000%
Polynomial 4	HDI	-1,2292	0,0000%
	HDI ²	0,0363	0,4056%
Linear 4	HDI	-0,7221	0,0002%
	PSD	0,0924	2,0480%

Table 5. Best five fitted model regression coefficients and statistics for Latvia

As one can see, the regression coefficients *t*-test *p*-values for all top 5 models do not exceed 2,1% and for 9 of total 10 are less than 0,5%, indicating a strong relationship between NPLs and relevant macro indicators for Latvia. Meanwhile, the regression coefficient signs are as expected and consistent with those reported in most published studies.

4.3 REGRESSION MODELS AND RESULTS FOR LITHUANIA

For Lithuania, five linear models provide the best fit to the selected data. The most common factors in created regression models are unemployment rate, % annual (UPL), net wages growth rate, % (NWG), household disposable income growth, % (HDI) and private sector debt, loans % of GDP (PSD), which corresponds to the previous correlation analysis. The following figure shows the relationships between HDI, UPL, and NPLs. As can be seen, the relationships are nonlinear in both cases and similar to Estonians and Latvians, however, the nonlinearity is less noticeable in the case of Lithuania and the disturbances are more visible.

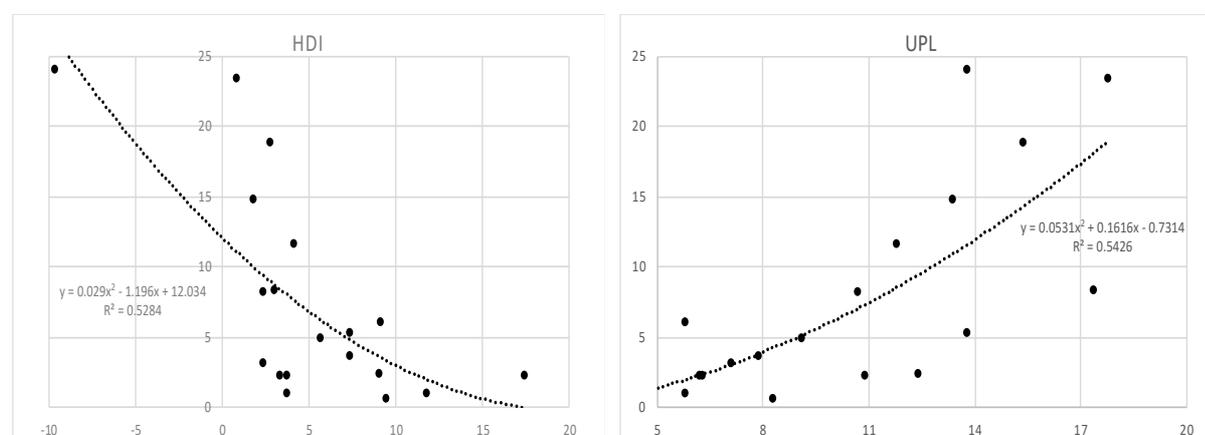


Figure 4. HDI, UPL and NPL relationships for Lithuania

The factors and statistics of the five best-fit regression models are summarized in Table 6.

Model type	Factors	R^2	F	p - value
Linear 1	UPL, HDtGDP	0,9722	279,5968	<0,01
Linear 2	UPL, HDtI	0,9542	166,5027	<0,01
Linear 3	UPL, NWG, PSD	0,9306	67,0218	<0,01
Linear 4	HDI, UPL, PSD	0,9174	55,5121	<0,01
Linear 5	Loans, PSD, INV	0,9018	45,9410	<0,01

Table 6. Best five fitted regression model factors and statistics for Lithuania

As can be seen, the best of the developed regression models allows explaining the absolute majority of the changes in NPLs. Thus, for example, the linear model with two factors – UPL and household debt to GDP, % (HDtGDP) - allows explaining ca. 97,2% of NPL changes in the case of Lithuania. Like in Latvia, the coefficients of determination of the following regression models are also high, which gives a wider choice in case of necessity.

As shown in Table 6, the F -statistics are significantly higher than the F -critical values at a confidence level of 0,95 ($\alpha = 0,05$) and the p -values are significantly lower than those traditionally used in such tests, indicating high statistical stability of all models.

The following table summarizes the results of the regression coefficient t -tests of the selected five models.

Model	Factors	Regression coefficient	p - value
Linear 1	UPL	1,6428	0,0000%
	HDtGDP	0,5727	0,0000%
Linear 2	UPL	1,7408	0,0000%
	HDtI	0,3739	0,0000%
Linear 3	UPL	1,0550	0,0002%
	NWG	-0,4932	0,0200%
	PSD	0,4867	0,0002%
Linear 4	HDI	-0,4518	0,0786%
	UPL	1,2171	0,0000%
	PSD	0,4297	0,0045%
Linear 5	Loans	-0,0449	2,5445%
	PSD	0,6626	0,0000%
	INV	-1,7307	0,0001%

Table 7. Best five fitted model regression coefficients and statistics for Lithuania

As one can see, the regression coefficients t -test p -values for all top 5 models do not exceed 2,6% and for 12 of total 13 are less than 0,1%, indicating a strong relationship between NPLs and relevant macro indicators for Lithuania. Meanwhile, the regression coefficient signs are as expected and consistent with those reported in most published studies.

4.4 COMMON BALTIC REGRESSION MODELS AND RESULTS

For Baltics fore, linear models and one polynomial model provide the best fit to the selected data. The most common factors in created regression models are investments, % of GDP (INV), unemployment rate, % annual (UPL), and household disposable income growth, % (HDI). The following figure shows the relationships between INV, UPL, and NPLs. As can be seen, the relationships are nonlinear in both cases and similar to those for each country, however, the disturbances are more visible.

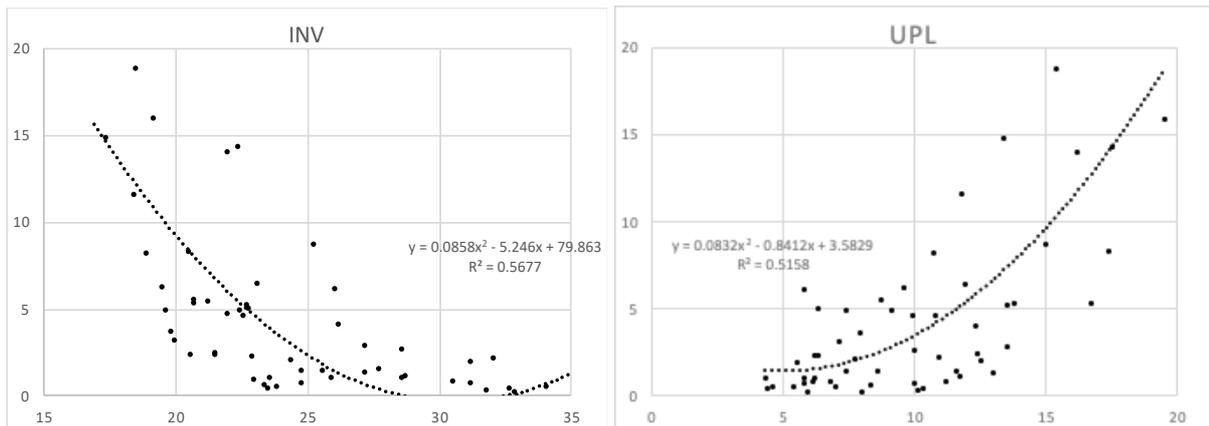


Figure 5. INV, UPL, and NPL relationships for Baltics

The factors and statistics of the five best-fit regression models are summarized in Table 8.

Model type	Factors	R ²	F	p - value
Linear 1	INV, LTR	0,6704	54,9283	<0,01
Linear 2	HDI, UPL, INV	0,6300	30,0864	<0,01
Polynomial 3	INV	0,6201	41,6228	<0,01
Linear 4	UPL, INV	0,5920	39,1821	<0,01
Linear 5	INV, HDI	0,5534	33,4567	<0,01

Table 8. Best five fitted regression model factors and statistics for Baltics

As can be seen, the best of the developed regression models allows to explain up to two-thirds of the changes in NPLs in the Baltics, which is significantly less than the country-calibrated models. Another problem for the calibration of a statistically stable unified Baltic model is the autocorrelation of factors that appeared in the Durbin-Watson tests. This is not surprising, given that the macroeconomic indicators of the Baltic States in the study period are quite similar. As shown in Table 8, the *F*-statistics are significantly higher than the *F*-critical values at a confidence level of 0,95 ($\alpha = 0,05$) and the *p*-values are significantly lower than those traditionally used in such tests, indicating high statistical stability of all models. The following table summarizes the results of the regression coefficient *t*-tests of the selected five models. As one can see, the regression coefficients *t*-test *p*-values for all top 5 models do not exceed 1,2% and for 10 of total 11 are less than 0,1%, indicating a strong relationship between NPLs and relevant macro indicators for Baltics. Meanwhile, the regression coefficient signs are as expected and consistent with those reported in most published studies.

Model	Factors	Regression coefficient	p - value
Linear 1	INV	-0,6758	0,0000%
	LTR	0,9919	0,0000%
Linear 2	HDI	-0,2497	1,1726%
	UPL	0,6112	0,0061%
	INV	-0,3576	0,0926%
Polynomial 3	INV	-5,4363	0,0000%
	INV ²	0,0884	0,0003%
Linear 4	UPL	0,7414	0,0001%
	INV	-0,4435	0,0059%
Linear 5	INV	-0,4243	0,0298%
	HDI	-0,5256	0,0022%

Table 9. Best five fitted Baltic model's regression coefficients and statistics

5. CONCLUSION

The economies of the Baltic States have shown relatively similar development trends over the last twenty years, and thus the list of factors influencing non-performing loans is comparable. As a result of the study, five statistically stable regression models have been compiled, with a confidence level of over 95%, for each of the

Baltic States, whose ability to determine changes in NPLs depending on such macroeconomic factors as HDI, UPL, PSD, and GDP is higher than 90%. Therefore, a basis has been prepared to provide an analysis-based assessment of credit risk management performance and to develop forecasts of expected credit quality changes based on a qualitative comparison of the results of several models. The development of uniform NPL regression models for the Baltic States is a certain challenge, as the volatility of the factors included in the models is quite different. This explains, why the coefficients of determinants for uniform Baltic regression models are significantly lower than country-specific models. Simultaneous research also shows that the developed regression models need to be regularly validated and, if necessary, recalibrated to capture changes in the impact of microeconomic indicators on NPLs, as the Baltic States, as small economies, are more sensitive to changes in the external environment.

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The Impact of Government Expenditure Budget on Economic Growth In The Case Of Ethiopia

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Abstract

The paper examines the impact of government expenditures on economic growth in Ethiopia based on annual time series data from 1991 to 2016, gathered from the Ethiopian Ministry of Finance and World Bank databases. Economic growth depends on capital and recurrent expenditure, agriculture, industry, trade, foreign direct investment, services, and inflation. The regression model between the variables Durbin-Watson and VIF Test for autocorrelation and multicollinearity was the instrument of analysis. The findings show that the dependent variable of economic growth has a positive and significant relationship with the predictors of trade, capital expenditure, and services. The beta coefficient is highly positive for capital expenditure, trade, and the service sector, implying that the higher the investment in services and trade, as well as an increase in capital expenditure, the greater the economic growth. The government should increase its efforts to guarantee that resources are appropriately managed and invested in producing areas to support economic growth.

Keywords: *Autocorrelation, Economic expenditure, Economic growth, Multicollinearity, Regression*

1. INTRODUCTION

The primary goal of public expenditure policy is to achieve long-term, equitable economic growth. Many government programs are geared primarily towards encouraging long-term, equitable economic growth. Public spending can and has played a significant role in the building of physical and human capital over time. Appropriate public spending may also be useful in stimulating economic growth, especially in the short run, when infrastructure or skilled workforce constraints become an effective limitation on increased production (IMF, 2020). For decades, the extent of government spending and its impact on long-run economic development, as well as vice versa, has been a topic of intense debate (VAMVOUKAS, 2004). Budget deficits, according to the macroeconomic literature, are stimulative to the economy, and budget surpluses are recessionary. However, the idea that increased government spending will boost the economy is debatable. Policymakers are often interested in demand management strategies and supply-side policies when assessing effective policy measures to encourage the economy. Demand management policies are concerned with the control of the money supply and government spending. Controlling the money supply will have an impact on the degree of liquidity in the financial sector, affecting private expenditure. Changes in government expenditure have a direct impact on consumer spending (Brahmasrene, 2007). The relationship between government expenditure and economic development has gotten a lot of attention in recent years, as Keynesian economists try to figure out how much government expenditure affects economic growth. Because of the absence of unanimity on the data and conclusions obtained, the consequence of their study has become more confusing than useful. Theoretical debates over the role of government expenditure in economic growth are still ongoing and contentious. From the literature, there are two major points of view (André, 2021), first, there's the Keynesian perspective, which sees government expenditure as a source of economic growth.

Thus, government intervention promotes economic activity when demand is low and slows it when demand is strong, resulting in internal and external imbalances. The case for government spending indicates that investing in roads, power, transportation, telecommunications, education, and health produces benefits that boost firm productivity and hence assist economic growth. In contrast to the Keynesian theory, neoclassical scholars assert that an expansionary fiscal policy has no positive effect on economic activity. According to these scholars, economic revitalization plans based on public expenditure would have a depressing effect on the economy since public spending crowds out private investment and consumption. These negative effects result from economic actors anticipating future fiscal policy consequences and adjusting their consumption and savings behavior accordingly. According to the macroeconomic literature, budget deficits are expansionary to the economy while budget surpluses are contractionary. However, the notion that more government expenditures can stimulate growth is controversial. When considering the appropriate policy measures that stimulate growth, policymakers are usually interested in demand management policies and supply-side policies. Demand management policies concentrate on the management of money supply and government expenditures. Controlling money supply will affect the level of liquidity in the financial market, and thus alters private spending. A change in the level of government spending directly affects aggregate demand in the economy.

2. STATEMENT OF THE PROBLEM

The Government expenditure budget has a significant impact on economic growth. Because of the differences in nature and goal, each component in the structure of Government budget expenditure has a distinct amount of effect on economic growth. The determination of whether or not Government budget expenditures influence the economy, as well as which component of government expenditures budget has a stronger impact on the economy, has significant implications for the government. Within a constrained budget, the government can nevertheless achieve faster economic growth by reallocating spending toward high-efficiency components and eliminating low-efficiency ones to reduce the economy's negative effect (Nguyen, 2019). There are two categories of public spending: developmental and non-developmental. The majority of the government's development spending is spent on infrastructure, industries, healthcare facilities, and educational institutions, among other things. The non-developmental expenditures are generally maintenance-related and include things like law and order, defense, and administrative services, among other things. The influence of taxes, spending, and budget balance on numerous economic issues such as resource allocation efficiency and factor accumulation rate is projected to affect a country's economic growth through the impact of government size on taxation, expenditure, and budget balance. (S. V. Seshaiyah, 2018). In a country like Ethiopia, public spending is critical to economic progress. The level of public expenditure in highly populated nations like Ethiopia is rapidly expanding as the government's duties and participation in economic activity grow. In the past two decades, the Ethiopian economy showed double-digit economic growth. However, this economic growth could not be continued for different reasons.

3. INSIGHT INTO THE LITERATURE

Keynesian economists advocated the use of government spending to promote growth and development by encouraging aggregate demand, particularly during recessions. This is the most obvious reason for the government's involvement in modern economic operations. This is because the government is required to remove short-term economic inefficiencies and to direct a country's growth and development in a socially optimum path. (Chandana Aluthge A. J., 2021). Several economic theories may be used to analyze the link between government expenditure and economic growth. This investigation, however, is limited to Musgrave's notion of increased government expenditure and Wagner's theory. According to Verbeck (2000), a lower level of per capita wages resulted in lower demand for public services. According to Musgrave, rising income levels will boost demand for public services, which will, in turn, expand the number of services provided by the public sector. In the long run, it will encourage the government to spend more on them. In addition, if per capita income was exclusively focused on primary necessities that were above the level of

income, demand for health, education, and transportation provided by the private sector would rise, motivating the government to spend more money. This isn't always the case, as a rise in government revenue doesn't necessarily imply economic development. (M.F. Oladele, 2017) Government spending continues to be a key tool in the development process. In practice, at all stages of growth and development, it plays a critical part in the operation of any economy. Today, the majority of developing and developed nations employ public spending to improve income distribution, direct resource allocation to targeted sectors, and influence the composition of national income (Chandana Aluthge A., 2021). The link between government spending and economic development has long been studied and debated. The focus of the discussion and the argument is on the government's involvement in national economic development. Regarding the partnership, there are primarily two viewpoints. On the one hand, the conventional effective demand theory argues that government expenditure, as an exogenous component, may be employed as a significant policy instrument to boost economic development within the Keynesian macroeconomic framework. On the other hand, Adolph Wagner's 1890 theory of the "law of the rising state role" implies that government spending is an endogenous component or effect of economic progress rather than a cause (Emerenini, 2014).

4. **EMPIRICAL REVIEW**

Mitchell (2005) examined how government expenditure affects economic growth in industrialized nations. He analyzed the economic consequences of these reforms by assessing international evidence, reviewing the most recent academic research, citing examples of countries that have significantly reduced government spending as a share of national output, and citing countries that have significantly reduced government spending as a share of national output. He concluded that a large and increasing government is not conducive to higher economic performance, regardless of the technique or model used. He went on to say that shrinking the government would result in increased earnings and improved American competitiveness. From 1970 to 2008, Abu and Abdullah (2010) studied the link between government expenditure and economic development in Nigeria. They attempted to untangle the influence of government spending on economic growth using disaggregated analysis. Their findings show that government total capital spending, total recurrent spending, and education all have a negative impact on economic development. Government spending on transportation, communication, and health, on the other hand, boosts economic growth. They urge that the government enhance both capital and recurring spending, including education spending, and guarantee that funds allocated for growth in these areas are adequately utilized. They also suggest that the government provide support and enhance financing for anti-corruption bodies in order to combat the problem of Nigeria's high degree of corruption in government agencies.

According to (Muhammed, 2014) from 1975 to 2011, in Ethiopia, the relationship between economic growth and various compositions of public expenditures was examined using co-integrated error correction models. The results revealed that only health expenditure and total capital expenditure are positive and statistically significant in agriculture, education, transportation and communication, urban development and housing, and total recurrent expenditures, on the other hand, are statistically insignificant. Real recurrent government spending on health and real capital government spending on education were large, and both had a favorable impact on inclusive growth in the short and long term. While economic freedom and the real GDP growth rate have a positive and negative influence on achieving equitable income distribution, they are not large enough to alter individual growth. Government capital spending had a detrimental influence on health, although it was not considerable. Recurrent government investment in education, on the other hand, inhibits inclusive growth. This result might be owing to inefficiency in allocating such funds to the correct places, such as poor people, as a result of rent-seeking and corruption. This is backed up by the inefficiency of institutions in promoting inclusive growth (Bono, 2020).

5. RESEARCH METHODOLOGY

The purpose of this paper is to assess the effects of government expenditure budgets on the Ethiopian economy through the two main components: capital and recurrent expenditure based on time series secondary data. The dependent variable in this study is economic growth, whereas the independent variables are capital and recurrent expenditure, agriculture, industry, service, foreign direct investment, inflation, and trade. The data were obtained from the World Bank database and Ethiopia's Ministry of finance for the period from 1991 to 2016 this covers 26 years of data.

Table 1 Research Data

Years	RE Billions	CE in Billions	RS in Billions	MDG Billions	TE Billions	GDP	FDI % GDP	AGRI % GDP	IND % GDP	SERV % GDP	INFL % GDP	TRD % GDP
1991	3.70	1.21	0.00	0.00	4.91	-7.14	7.28	58.67	7.28	29.67	19.08	9.01
1992	3.06	1.48	0.00	0.00	4.54	-8.67	6.09	63.83	6.09	26.83	15.53	15.67
1993	3.52	1.78	0.00	0.00	5.30	13.14	7.45	59.95	7.45	28.71	13.38	17.69
1994	4.51	2.69	0.00	0.00	7.20	3.19	8.18	52.70	8.18	33.80	2.93	29.01
1995	5.71	3.16	0.00	0.00	8.87	6.13	9.29	51.92	9.29	33.13	12.71	29.55
1996	5.89	3.56	0.00	0.00	9.45	12.43	9.78	51.17	9.78	33.27	0.24	29.77
1997	3.65	4.07	1.41	0.00	9.13	3.13	12.20	54.03	12.20	27.37	0.21	28.93
1998	4.96	1.78	3.23	0.00	9.97	-3.46	11.57	49.06	11.57	32.84	-0.15	37.41
1999	7.10	2.39	3.37	0.00	12.86	5.16	12.19	45.49	12.19	35.86	2.22	38.24
2000	10.28	2.14	2.68	0.00	15.10	6.07	11.41	44.67	11.41	37.45	9.46	33.26
2001	7.24	3.52	3.89	0.00	14.65	8.3	0.35	42.34	11.93	38.5	-5.76	39.54
2002	7.72	4.53	4.21	0.00	16.46	1.52	0.26	38.69	12.74	41.44	-3.62	40.32
2003	6.90	4.58	4.90	0.00	16.38	-2.16	0.47	37.23	12.9	42.75	12.77	53.95
2004	8.41	6.26	5.31	0.00	19.98	13.57	0.55	38.68	12.69	40.07	3.91	54.44
2005	8.62	8.50	5.85	0.00	22.97	11.82	0.27	41.17	11.79	39.14	9.88	58.09
2006	8.68	11.84	7.46	0.00	279.82	10.83	0.55	42.52	11.59	38.57	11.55	56.04
2007	8.54	13.84	10.02	0.00	323.98	11.46	0.22	42.27	11.59	39.11	17.22	51.42
2008	10.39	17.36	14.21	0.00	419.59	10.79	0.11	45.18	10.21	37.9	30.31	51.9
2009	10.82	26.48	17.31	0.00	546.05	8.80	0.22	45.88	9.68	38.77	24.15	40.83
2010	13.21	37.56	20.51	0.00	712.82	12.55	0.29	41.44	9.44	41.76	1.44	52.27
2011	17.29	43.80	26.18	0.00	872.66	11.18	0.63	41.25	9.66	41.43	20.06	56.33
2012	35.98	41.49	30.88	12.86	1,212.03	8.65	0.28	44.33	9.48	38.58	33.54	49.88
2013	26.85	60.83	36.62	17.22	1,415.14	10.58	1.34	41.24	10.94	39.67	4.9	45.35
2014	30.04	69.14	42.80	14.57	1,565.57	10.26	1.86	38.52	13.47	39.89	10.98	46.82
2015	41.73	68.84	62.66	14.69	1,879.21	10.39	2.63	36.06	16.3	39.55	10.83	42.71
2016	70.45	86.06	79.08	0.48	2,360.65	9.43	4.14	34.7	21.93	36.72	10.4	37.12

Source: Ministry of Finance & World Bank

Where RE recurrent expenditure, CE capital expenditure, RS regional subsidy, MDG millennium development goal, TE total Expenditure, GDP Gross Domestic Product, FDI foreign direct investment, ARG agriculture, IND industry, SERV service, INFL inflation, and TRD trade.

Table 1: Pearson's correlations matrix of dependent and independent variables [[

	Economic Growth	Recurrent Expenditure	Capital Expenditure	Agriculture	Industry	Service	Foreign Direct Investment	Inflation	Trade
Economic Growth	1								
Recurrent Expenditure	.064 .37	1							
Capital Expenditure	.399* (.022)	.708** .000	1						
Agriculture	-.485** .006	.555** .002	-.568** .001	1					
Industry	.259 (.101)	.733** .000	.580** (.001)	-.743 .000	1				
Service	.476** (.007)	.315 .058	.416* (.017)	-.705** .000	.401* (.021)	1			
Foreign Direct Investment	-.397* (.022)	-.267 .074	-.396* (.023)	.595** .001	-.150 .232	-.734** .000	1		
Inflation	.057 .391	.204 .159	.218 .142	.076 .338	-.225 .134	.046 .412	-.327 .052	1	
Trade	.559** .002	.224 .136	.329 .050	-.812** .000	.358* .036	.860** .000	-.689** .000	.120 .280	1

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Model 1: The dependent variable is economic growth, whereas the determinants are independent factors.

$$EG = \beta_0 + \beta_1RE + \beta_2CE + \beta_3AGR + \beta_4IND + \beta_5SER + \beta_6FDI + \beta_7INF + \beta_8Trd + \epsilon$$

The highest positive and significant correlation coefficient of 0.559 is found between economic growth and the trade sector, while the lowest and most negative correlation coefficient, -0.860, is found between the trade sector and services. Service and capital expenditure, with a positive and significant correlation coefficient of .476 and .399, respectively, affect the economic growth of the country, implying that the higher the investment in the service sector and the higher the capital expenditure budget, the higher the economic growth. The findings show that current expenditure, industry, and inflation are positively associated with the dependent variable of economic growth. In addition, foreign direct investment and agriculture are related negatively to economic growth, implying that the higher foreign direct investment and agriculture, the lower the economic growth.

5.1. Regression analysis

This study uses secondary data analysis based on the regression model to examine the statistical significance and reliability of the outcome. It primarily focuses on regression results from various model parameters in order to investigate the influence of government expenditure on economic growth.

Table 2 Collinearity Statistics

Model	B	t	Sig	Collinearity Statistics		F	Sig
				Tolerance	VIF		
Constant	211.887	1.137	.271			57.214	.009
RE	-0.005	-0.017	.689	.315	3.177		
CE	.507	.409	.007	.113	8.843		
ARG	-2.174	-1.196	.247	.195	5.119		
IND	-2.438	-1.093	.289	.486	2.057		
SER	2.170	.975	0.034	.359	2.785		
FDI	-.101	-.230	.821	.355	2.817		
INF	.018	.050	.961	.548	1.824		
Trade	2.213	.857	0.021	.361	2.718		
R .783 R-Square .742 Durbin-Watson 1.689							

Economic growth: Dependent Variable

As shown in Table 2, the tolerance levels for all variables are greater than 0.10, the VIF value is less than 10, and the correlation matrix of all variables has paired values less than 0.80 (table1 above), this result indicates that there is no multicollinearity issue that distorts the findings analyzed.

6. CONCLUSION AND RECOMMENDATION

The purpose of this study was to discover which components of public expenditure contribute to growth and development, which ones don't, and which ones should be reduced or decreased to the absolute minimum.

The study employs a statistical methodology based on economic models, trend analysis, and basic regression. The findings show that economic growth is positively associated with and dependent on the service sector, trade, and capital expenditure. This means that the more trade, service, and capital expenditures there are, the higher economic growth will be. Increases in FDI and agriculture, on the other hand, result in weaker economic growth. Based on the findings the following recommendations are forward to the policymakers and concerned bodies:

- The government should devise an effective expenditure budget control system to enhance efficiency in public sectors and increase its capital expenditure budget to build and improve infrastructure to attract foreign direct investments so that it stimulates the economy's growth.
- The government should create a conducive environment by modernizing its services so that investors engage in the service and trade sectors in order to contribute to economic growth.
- The government should use both monetary and fiscal policies as inflation controlling techniques to improve the living standards of its citizens.
- Agriculture should be given a higher emphasis on both diversity and technology, especially in a country like Ethiopia where the majority of the society is agrarian.

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Brief Feature of Poverty and Rural poverty and the Circle of Decline in Romanian Rural Area

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ABSTRACT

In recent years, poverty has become quite important, affecting a large part of the population, which also means driving a sustained effort for specific forms of social assistance. More and more strong signals are being drawn to reduce poverty and social exclusion among vulnerable groups, especially in a rural areas, where the decline in poverty is much more pronounced. This means knowing and continuously analyzing these rural contingencies facing poverty, finding solutions to improve the social assistance system that intensifies the poverty reduction and support social inclusion and employment growth, actions that respond more pronounced in the current economic and social challenges, in line with the dynamics of the social dimensions. This dynamic has multiplied the tensions that social assistance systems have to deal with, thus multiplying the need for adequate, coherent, effective, and efficient social programs. The paper depicts a picture of poverty and the circle of decline in Romania, with particular reference to the rural area that is most affected by poverty. The indicators analyzed in the dynamics suggest that, despite efforts to reduce poverty, even if there have been declines since the beginning of the decade, values remain high, which intensifies the efforts to reduce vulnerabilities and poverty risks faced by a large part of the population, especially in a rural area.

Keywords: *Decline circle, Indicators, Poverty and rural poverty, Rural dimensions*

1. INTRODUCTION

Poverty is one of the worst social problems that societies have faced for a long time. The phenomenon affects both developing and developed countries. Despite the considerable progress, poverty continues to affect a large part of the population, especially in rural areas. Europe is constantly faced with ambitious challenges to reduce poverty and its extreme forms (severe and extreme poverty, social marginalization, precariousness/material deprivation, social exclusion), which would also mean achieving a greater degree of well-being, social cohesion, a better quality of life, correlated with a higher degree of employment among these vulnerable people, with their employment stimulation and poverty reduction. This means improving policies to better meet this common goal. These strategic targets are always in the attention of decision-makers, those involved in the design, substantiation, and implementation of social policies involved organizations with responsibilities in this field, but also all other social actors. Sustained joint efforts are being made to achieve these particularly important specific targets with major economic and social impact. Thus, at the European level, according to the Europe 2020 Strategy, a reduction of at least 20 million in the number of people at risk of poverty and its

severe and extreme forms has been considered. In this sense, the fight to reduce poverty and its extreme forms is one of the central objectives of the European Union, implicitly also at the national level. This is an assiduous goal present in all current strategy documents. Thus, European social security systems have undergone major reforms, and social inclusion has always been a leitmotif of national policies, focusing on ways to include vulnerable persons, to reduce poverty and social exclusion, especially by including activation elements in social assistance policies. The priority given to social inclusion is the result of a shift in the focus on poverty alleviation towards promoting social and occupational inclusion and social cohesion. These targets must be kept in mind, the picture of poverty must always be known, to build and/or improve real, effective, and efficient measures to reduce these social risks. The pulse of poverty and social exclusion must be constantly monitored, and these feedbacks are particularly important not only in the ongoing evaluation and monitoring, in improving policies, but also in poverty alleviation and thus achieving European and national goals.

2. NATIONAL CONTEXT

At the national level, by 2020, according to the National Strategy on Social Inclusion and Poverty Reduction, a reduction by 580 thousand people of people living in poverty is expected. According to the half-yearly country report published in March 2018 by the European Commission, Romania has already reached the assumed threshold of reducing the number of people exposed to the risk of poverty and social exclusion (European Commission, European Semester 2018, 64/76). Although Romania has reached its target of reducing the number of people at risk of poverty and social exclusion, the latest European Commission country Reports show an alarming increase in poverty, especially among children and young people, but also among households with dependent children, as well as those in a rural area, where poverty continues to reach high values. European and national strategies also take into account rural areas, so through its rural development policies, it is desirable to intensify efforts to support these rural areas to cope with multiple economic and social challenges. The local focus is justified by the spatial concentration of poverty and poor communities subject to marginalization and social exclusion, so area interventions must be seen as integrated into a participatory development framework to overcome inequalities and growing challenges. According to Eurostat data, over 31% of Romania's population was exposed to the risk of poverty and social exclusion (over 6 million people), while in a rural area there were 44.3% (over 3.78 million people), and in cities and suburbs, the percentage reached almost 28% (almost 1.5 million people). In large cities/metropolises, poverty affects 14.5% of the population in 2019. According to the Memorandum of understanding for the approval of the National Strategy on Social Inclusion and Poverty Reduction, poverty is 3 times more prevalent in rural than in urban areas, while 1 in 2 children in a rural area are in poverty, over 90% of working poor people are located in rural, 95% have at most high school education, and approx. 37% are affected by material deprivation. All these data suggest that people in the rural area face high risks of poverty. Despite declines since 2015, these impoverishment risks of the population, especially young people, children, people with low educational level, households with children or single parents, etc. - all these vulnerable groups continue to put great pressure on the individual, households, community, and also on the protection and social assistance systems.

3. SPECIFIC CONTEXT

Bertolini (2019) considers the problem of poverty unresolved, including in developed countries. The positive effects of interventions in rural agricultural and social policies have failed to eliminate “the cumulative negative effects of the vicious circle of the labor market, demography, education and isolation” (Bertolini, 2019, 1), emphasizing “the role of coordination between top-down with location-based policies”. Cord (2002) argues the importance of developing strategies to reduce rural poverty regardless of the country's developmental stage. Ravallion (2007) estimates that “75% of the global poor live in poor rural areas and, worse, if current trends continue, the share of the poor will not fall below 50% by 2035”. The need for new policy approaches is argued by Cord (2002, pp. 67), through the specific and universal characteristics of rural poverty:

- A strong reliance on the natural resource base to sustain livelihoods, which has led to: (1) a high-risk environment for households, given their vulnerability to climatic fluctuations, plant and animal disease, price fluctuations, and macroeconomic policy shifts (for example, devaluation, interest rates, and so forth); (2) seasonal incomes and food supply; (3) heterogeneous agricultural production and investment strategies; and (4) limited growth opportunities, given the low and relatively inelastic demand for food products as national incomes rise;
- A low population density and geographic constraints, which have led to high transaction costs
- and reduced access to physical and social infrastructure;
- An informal economy, which makes it more difficult for policymakers to influence local labor markets and to provide targeted social protection or other support based on income criteria;
- Cultural and linguistic differences, which have often led to limited voice in national and even
- local decision-making processes, especially in remote areas;
- An important role for women in the economy that is often not recognized in rural income-generating programs or women’s access to social services”.

3.1. OECD Model of the decline cycle for rural areas

Poverty is relative, multidimensional, and gradual (Atkinson et al, 2002) and has many nuances. Khan argues that “The causes of rural poverty are complex and multidimensional. They involve, among other things, culture, climate, gender, markets, and public policy. Likewise, the rural poor are quite diverse both in the problems they face and the possible solutions to these problems. This pamphlet examines how rural poverty develops, what accounts for its persistence, and what specific measures can be taken to eliminate or reduce it” (Khan, 2001). The European Commission (2008) notes that rural areas tend to show poorer economic performance. This aspect is also reinforced by the OECD model of the decline circle for low-performing rural areas (OECD, 2006) – model shown in Figure 1. The cycle of poverty begins with a *low population density*, which, according to the OECD, is a fundamental feature that characterizes rural areas, as opposed to non-rural ones (urban spaces). This element generates a *lack of critical mass for services and infrastructure*, which in turn leads to a lower rate of *business creation* and, consequently, *fewer jobs*. These shortcomings in the labor market stem from *migration flows*, which, combined with an *aging population*, further reduce *population density*, thus closing the “circle of decline.” In approaching the new rural paradigm, the OECD (2006) proposes a policy orientation to job creation rather than to sectors, with the new focus on the intervention being on investment rather than subsidies.

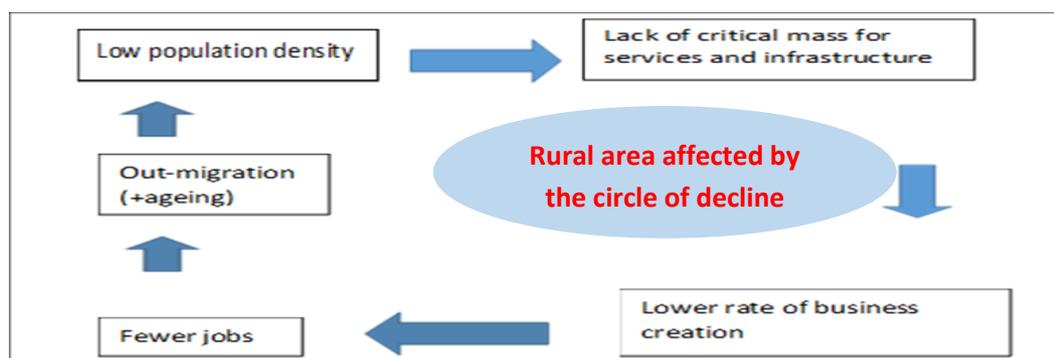


Figure 1. OECD Model for the Circle of decline regarding the rural area with low economic performance (Source: OECD, 2006. *The new rural paradigm: policies and governance*)

The European Commission (2008) also identifies in the EU the problem of depopulation in less-favored areas (LFAs). These LFAs are locations that usually have major accessibility issues (e.g. mountains, etc.). SERA/ERSA satellite data (2006) illustrated that “many of the most remote rural areas are still depopulated or dependent on agriculture; they still face problems of lower levels of income and employment rates, higher

unemployment rates, weaknesses in skills and human capital -especially in agricultural sector and food processing industry-, unfavorable demographic situation, lack of opportunities for women and young people, slower development of the tertiary sector. Those areas will face in perspective heavier challenges as regards growth, jobs, environment, even if the disadvantage connected to location does not necessarily per se transform LFAs into poor rural areas. For example, many mountain areas of France and Italy have registered a notable improvement in their economic conditions thanks to the development of tourism” (European Commission, 2008, 53).

4. RURAL POVERTY – THE DYNAMICS OF SOME INDICATORS RELEVANT FOR THE RISK OF RURAL

4.1. Risk of poverty – high risk of poverty in a rural area in the last decade/deceleration of the realization process

The share of people at risk of poverty earning less than 60% of the median income per equivalent adult has been on an upward trend since 2012, reaching a maximum of 25.4% (2015), then placing in a slight decrease (23.5% in 2018) and increasing slightly in the following year (23.8% in 2019). The event in the last year, the incidence of poverty is high, poverty risk affects a large part of the population, of approx. a quarter nationally and almost 40% in the rural area. Differences between areas of residence are strongly affected from the perspective of people living in poverty, so that in the rural area are found in the last reference year 38% of people living in poverty, compared to almost 20% in town and suburbs and approx. 6% in big cities. In rural areas, the periods of growth alternate with those of decrease of the poverty risk, so that the percentage of people facing poverty starts from 35% in 2007, reaches a maximum of over 40% in 2015, then alternating years of increase with those of decrease.

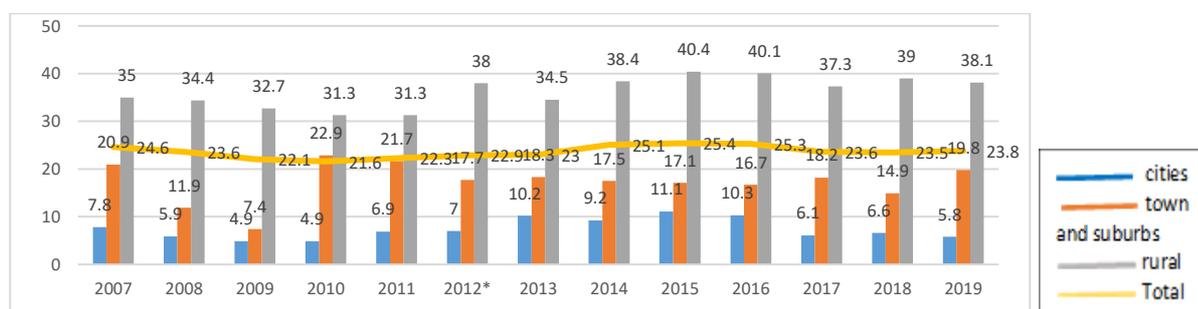


Figure 2. People at risk of poverty by a degree of urbanization, 2007-2019 (%)
 (Source: Eurostat, [ilc_li43])

At the level of the last year of analysis in rural areas, there are 38.1% of people living in poverty, which means over 3.25 million rural people are affected by poverty. Practically, in almost 1 and a half decades, it can be appreciated that poverty in a rural area could not be reduced, but, on the contrary, it has seen increasing trends, despite many actions, programs, directions of action, plans, and strategies. On the other hand, even if these actions targeted the development of the rural area, they did not stand out in the significant poverty reduction. This once again confirms that pro-poor growth is not aimed at the poorest people. At the same time, even if there was a slight decrease in the poverty incidence in one year, this was a conjunctural situation, not a sustainable one, which would support the rural population to overcome the state of vulnerability and risk in the face of poverty and associated phenomena.

4.2. Dramatic demographic changes – increase the share of the rural population in total population in the last decade/deceleration of the urbanization process

The total population residing in Romania decreases by almost 1 million people per decade. The gap between urban and rural areas is increasing, while the urban population is declining by 1.2 million people, and the rural population is declining by 386.8 thousand people. As a result, in the period 2007-2018, the share of the rural population increases by 1.7 pp., from 44.1% in 2003 to 46.2% in 2018.

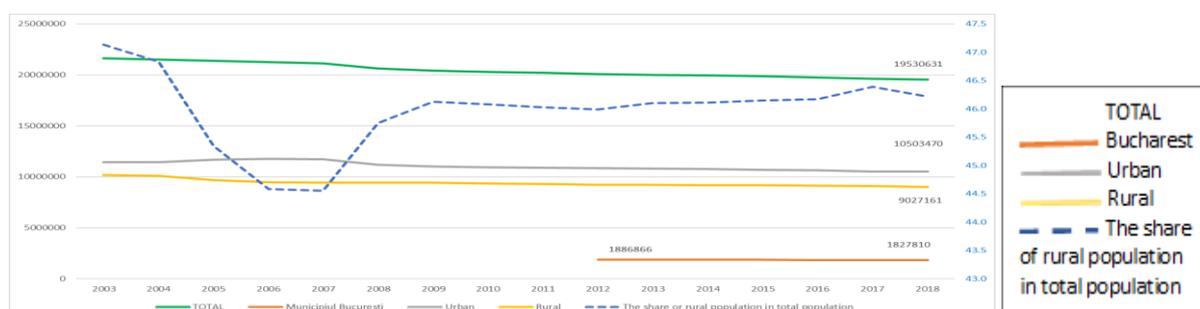


Figure 3. Trends in the evolution of the population by urban and rural areas of residence (Source: INS, Tempo online, Resident population on January 1)

4.3. Population aging

The population aging is indicated by the negative dynamics of the natural growth rate, the increase of the permanent population average age, and as a general trend of life expectancy increasing. Even if the trend of population aging in general, there are visible particularities for the rural area that indicate additional risks, and in particular the poverty risk. Thus in rural areas:

- especially after the year 2000, there are negative rates of population growth;
- after 2012, the rural population tends to have a lower average age than in rural areas. In 2017, the average age in rural areas is 40.9 years and in urban areas 41.9 years;
- especially after 2007, life expectancy shows a significant upward trend, but with a large difference between residential areas. Thus in 2007 rural life expectancy was 72 years, 1.3 years less than in urban areas, and in 2017 rural life expectancy increases to 74.2 years, but also increases the difference compared to urban life expectancy at 2.8 years!

The natural population growth rate decreased drastically in the first post-December period, from 3% in 1990 to -2.4% in 1996. Regardless of the urban or rural area, on average this rate decreases in the period 1990-2017 with - 5.5 percentage points, except for Bucharest, which registers only -0.8 pp. The natural growth rate of the population in the urban area shows a tendency to correlate with the shocks in the economy. Before the last crisis (2008, 2013), the natural population growth rate became positive of 0.6% in 2008 and 0.1% in 2013 in the urban area, falling sharply after the shocks mentioned. This process indicates the buffer role of the rural area in ensuring the livelihood of the vulnerable for the employed, indicating migrations from temporary rural to urban movements. In the last 26 years, in the period 1992-2018, the average age of the permanent population decreased by 6.4 years from 35 years in 1992 to 41.4 years in 2018. The aging process is accelerating in the urban area. The average age of the population with urban permanent residence decreased by 9.2 years, and in rural by 3.2 years. This trend is contrary to the large global big cities where people come for work and study and less for housing. The lack of capacity to attract and retain talent, creativity, and youth indicates a low level of competitiveness on the world market for Romania in general and the best cities in particular. This indicator also suggests a low efficiency of the labor market.

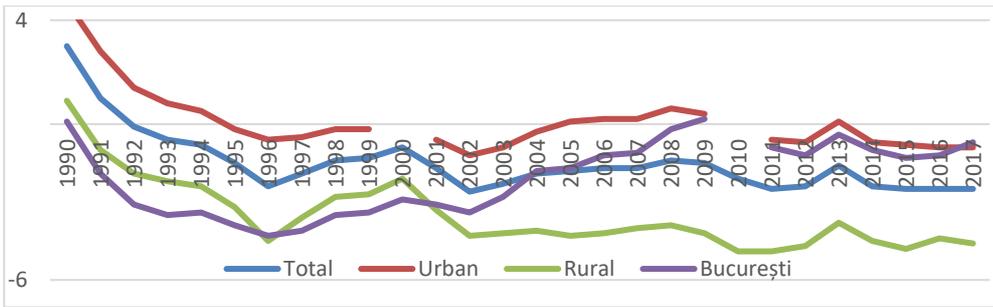


Figure 4. Natural population growth rate, by urban and rural areas of residence (%)
 (Source: INS, Tempo online, Natural population growth rate)

The rhythm of population aging has been maintained for the last decade. The average age of the stable population decreased by 2.6 years, the average age of the urban population decreased by 3.5 years, and in a rural area it decreased by 1.6 years.

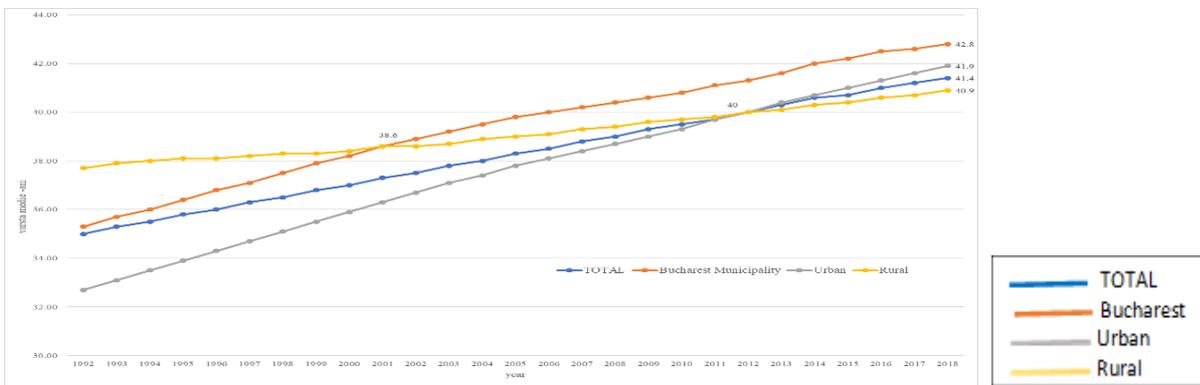


Figure 5. The average age of the resident population, by urban and rural area of residence
 (Source: INS, Tempo online, Average age of the resident population)

Life expectancy is growing at a rate comparable to the average age of the resident population. Life expectancy has been steadily rising since 1997. In the 1990-1996 period, there was a declining trend from 69.6 years in 1990 to 68.9 years in 1996. In 2017, life expectancy was 75.7 years, higher by 6.78 years compared to 1997 and higher by 3.12 years compared to 2007. Since 2007, the gap has increased in terms of life expectancy. Before 2007, the life expectancy gap decreased from 1.85 years in 1996 to 1.7 years in 2007. The increase in the effects of globalization and the transition to agglomeration economies lead to an increase in this gap from 1.3 years in 2007 to 2.8 years in 2017, practically indicating an increase in the polarization of the quality of life and implicitly a loss in the economic power of the rural area.

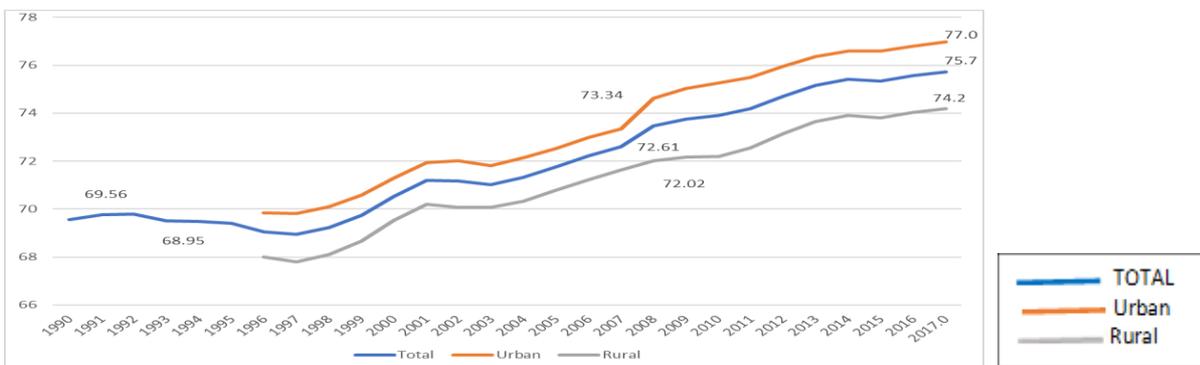


Figure 6. Life expectancy by urban and rural area of residence
 (Source: INS, Tempo online, Life expectancy by urban/ rural area)

In the urban area, male life expectancy is 73.7 years in 2017, 7.58 years higher than in 1996; for women, it is 80.07 years in 2017, 6.3 years higher than in 1996. In the rural area, male life expectancy is 70.59 years in 2017, 6.46 years higher than in 1996; for women, it is 78.2 years in 2017, 5.87 years higher than in 1996. The gender gap (difference in life expectancy between men and women) slowly decreases in urban areas from -7.65 years in 1996 to -6.28 years in 2017, and in a rural area there is a slower pace, this gap decreases from -8.2 years in 1996 to -7.61 years in 2017. Life expectancy is divergent depending on the area of residence and gender dimension.

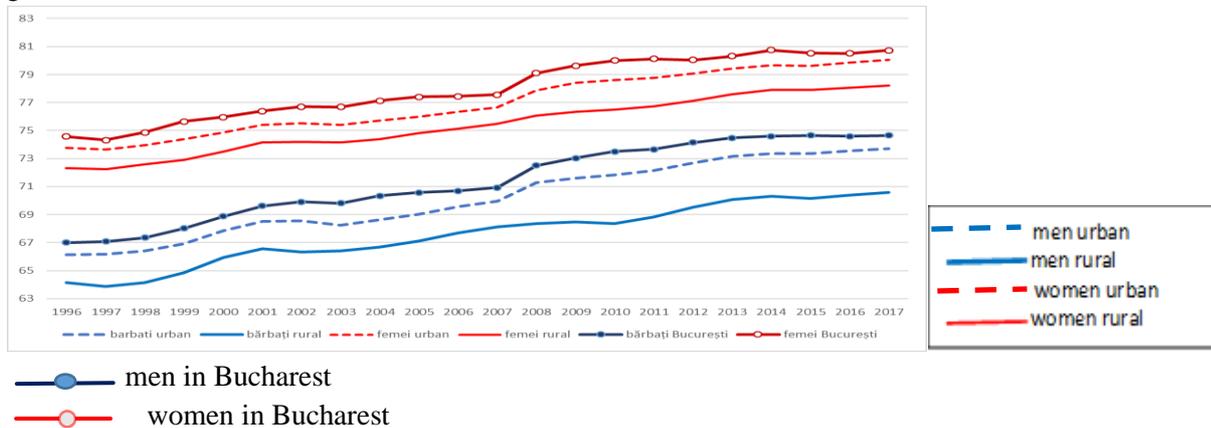


Figure 7. Life expectancy by urban and rural area of residence and gender dimension (Source: INS, Tempo online, Life expectancy by urban /rural area and gender dimension)

4.4. Vulnerability of the family – employment trends

The general trend in the last two decades is for women to leave the labor market. In the context in which, for the period 2000-2018, life expectancy increases for both sexes by more than 5 years, the length of life in employment decreases, for women by 4 years and for men by 1.1 years. Men tend to be more active in the labor market, illustrated by the growing gap in working life between men and women from 3.3 in 2001 to 6.5 in 2018.

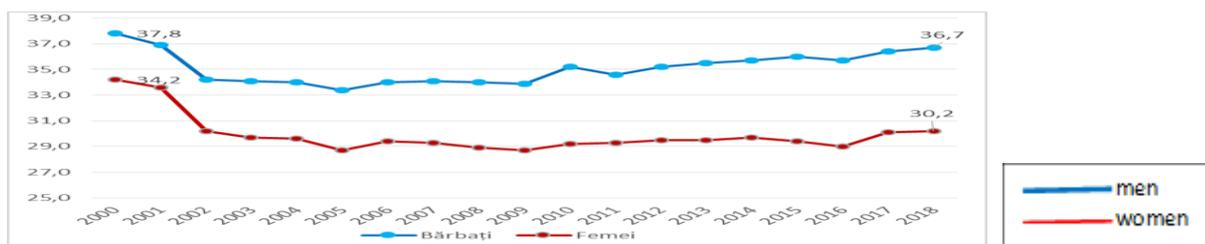


Figure 8. Duration of working life by gender dimension, 2000-2018 (years) (Source: INS, Tempo online, Duration of working life - annual data)

4.5. Increasing the trend for global labor mobility and the new model of poverty alleviation – increasing the remittances

In the 1998-2018 period, the presence of globalization on the Romanian labor market becomes evident, especially through the increase of labor mobility, expressed by the migration of Romanian citizens in other countries. Thus, if the resident population on January 1 decreases by 3 million inhabitants from 22.5 million inhabitants in 1998 to 19.5 million inhabitants in 2018, the population (Romanian citizens living in other countries) respectively the population in the diaspora increases by from 200 thousand in 1998 to over 3.4 million Romanian citizens in 2018, according to Eurostat data.

The share of Romanian citizens in the diaspora in the total resident population increases from 0.9% in 1998 to 17.6% in 2018. It is important to note that the intensity of the phenomenon accelerates after 2011 when this share is 9.2%.

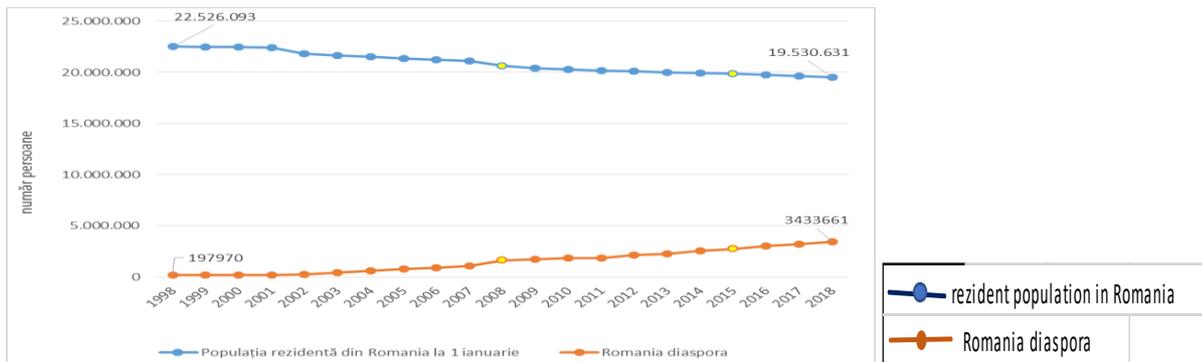


Figure 9. Evolution of resident population on January 1 and of the population in the diaspora
 (Source: Eurostat, Population on 1 January by age group and sex)

Ketkar & Ratha (2008) highlight the innovative role of remittances in financing development for countries faced with poverty risk. Remittances to Romania of national people in the diaspora become comparable to direct investment funds as a share in GDP since 2013. Thus, the share of direct investment in GDP is 1.85 of GDP, equal to that of remittances in 2013. In 2017 remittances represent 2% GDP.

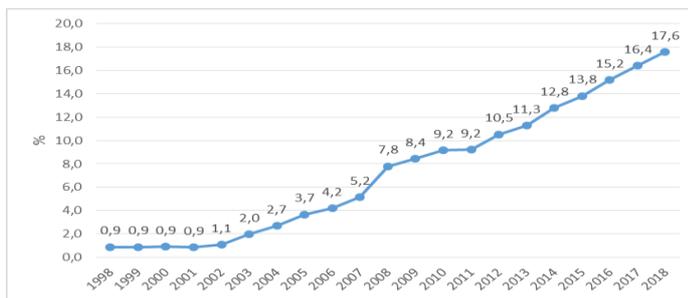


Figure 10. Share of the diaspora in the total resident population
 (Source: Eurostat, Population on 1 January by age group, sex, and citizenship)

The evolution of the number of working-age population by area of residence and by age groups in the 1996-2017 period indicates a change of pattern, especially after 2013. Correlating this information, it can be deduced that in the last wave of migration (after 2013), people over the age of 50 have left the country and, with the exception of young people aged 15-24 who are on the verge of entering on the labor market, the population aged 25-49 migrates to urban areas. People in the 25-34 age group indicate a high probability of external mobility for work, regardless of the area of residence (urban/rural).

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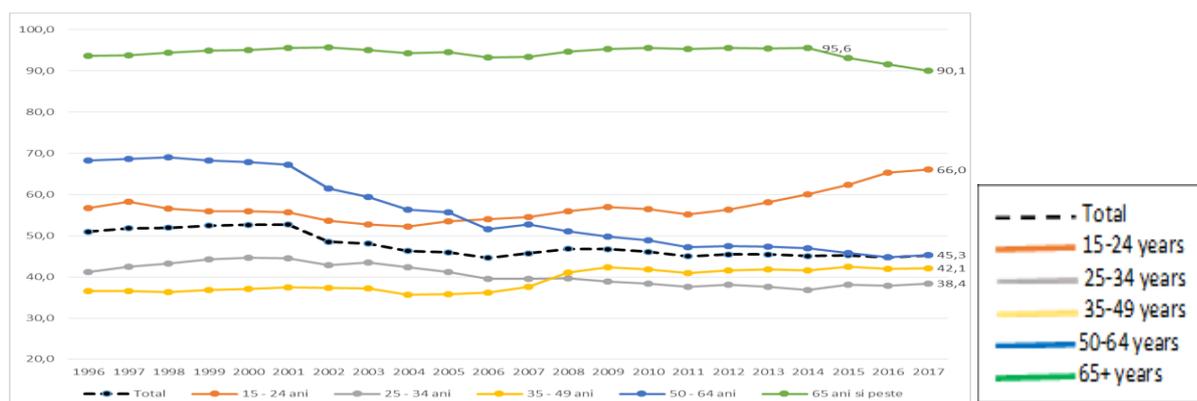


Figure 11. The share of the working-age rural population in the total population by age groups, 1996-2017 (Source: INS, Tempo online, Active population by age groups)

5. CONCLUSION

The analysis of these indicators shows that the rural area has increased exposure trends to the risk of generating the circle of decline: an aging population, low density, trends of population loss, which also means the absence of critical mass for services and infrastructure, but also low rates for businesses and enterprises creation and, implicitly, of fewer jobs, this circle generating, sustaining and leading largely to poverty and social exclusion, as OECD model (OECD 2006).

The main problems specific to the rural area are related to a multitude of aspects, starting from the demographic ones; education; labor market; the distance/isolation that makes it difficult for some communities to access public and private services, and therefore poor infrastructure and poor access to basic services. These four categories of problems can interact and generate “vicious circles” that reproduce and amplify the phenomenon of poverty in rural areas (European Commission, 2008; Bertolini, 2019):

- “The demographic vicious circle” begins with an unfavorable demographic situation characterized by a high share of the elderly population, low share of young people, and low population density that negatively affects the economic performance of the rural areas, resulting in low birth rates and high migration, which further worsen the demographic situation. The causes of the aging phenomenon are mainly the decrease in the birth rate, emigration, and the increase in life expectancy as a result of medical progress and the improvement of the quality of life. The phenomenon of aging takes place against the background of emigration, as well as the migration of young people to urban areas and people of retirement age from urban to rural areas. However, the medium- and long-term consequences can be very serious, especially on the labor market, which also attracts related issues such as migration, education, health, housing, poverty, and so on. In order to avoid the unfavorable consequences of demographic aging and migration, given the temporary migration, but especially the permanent one, it is important for the rural areas to have the capacity to make an attractive offer for the integration of new immigrants both professionally and also for living conditions, but also an attractive one to conserve resources and to develop the rural areas.
- “The vicious circle of distance” is generated by poor infrastructure, which negatively affects the economic performance of the areas and promotes migration; this has a negative impact on the demographic situation, which in turn is another obstacle to infrastructure development. From the perspective of digital infrastructure, increasing digital connectivity and moving to a diversified economy can open up new innovative ways to address the social challenges that are driven by rural communities.
- “The educational vicious circle” is generated by the low educational level of the majority of the rural population; this causes a low employment level and can therefore increase the poverty rate, which in turn affects the chances of receiving a high-quality education.
- “The vicious circle of the labor market” begins with poor labor market opportunities in many rural areas, with predominant jobs in the agricultural sector, with low incomes due to the practice of subsistence

farming in many cases, because the rural economy is insufficiently diversified and poorly integrated into the market economy. This aspect forces many skilled people to migrate and thus worsen the quality of the local workforce. A low-skilled workforce is a deterrent factor to the investment of domestic or foreign companies in the area, resulting in further deterioration of the labor market situation, but also in increased poverty.

The evolution of population quotas in rural areas indicates a trend of increased exposure to the risk of generating the circle of decline (OECD, 2006): the aging population, low population density, trends of population loss through migration. On the other hand, many other determinants, such as the level of education, health status, and so on, directly affect employment and at the same time has a direct impact on poverty, leading to an increase the vulnerabilities. At the same time, in the rural area, these vulnerabilities are further amplified, the risks of poverty, as well as those of poverty and social exclusion having significant magnitudes and persistences. All these major predictors and determinants of poverty (education, health, employment, and so on) feed, self-generate, and support each other. All these major determinants represent the core of all national strategies and policies aimed at reducing poverty and social exclusion. Over time, numerous strategies, action plans, measures, directions of action, initiatives at the national, regional, county, rural, and the local levels, that directly concern the individual/household, as well as zonal strategies, that directly concern the community as a whole, have been implemented. Although this broad spectrum of sectoral policies, programs, and interventions that have targeted either the entire population or various vulnerable groups facing various social risks, had some results: the effects are visible by reducing the incidence of poverty in recent years. These efforts must be supported, continued, and amplified, with the major aim of reducing the poverty and social exclusion and improving the quality of life, especially among vulnerable people.

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Corporate Governance and Institutional Investors: Why are They Important?

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ABSTRACT

The goal of this paper is to analyze the involvement of institutional investors in the corporate governance of companies in their portfolio by analyzing characteristics of institutional investors concerning the type of investment, investment time horizon, and degree of involvement in the process of managing a company. Starting from the deductive approach, the method of description, compilation, and classification is applied in this review paper, which describes and groups the previous theoretical and empirical research. Main findings indicate that institutional investors are involved in the corporate governance of their portfolio companies and that control mechanisms they use include voting rights at general assembly meetings, direct communication with the management to discuss strategies for future development, and collaboration with other institutional investors in the ownership structure. The theoretical contribution of this paper is an extensive, critical, and systematic review of existing theoretical and empirical findings from the domain dealing with the impact of institutional investors on the corporate governance of companies, and identifying key future opportunities to advance knowledge in this field.

Keywords: *Corporate Governance, Corporate Governance Mechanisms, Institutional Investors*

1. INTRODUCTION

Agency theory represents a useful tool for understanding the crucial issue of corporate governance – the issue of the relationship between owners, i.e. the principal and firm management, i.e. the agent. Jensen and Meckling (1976) argue that the basic goal of agency theory principles is resolving issues and formalizing the relationship between the owner and the manager, to whom the owner delegates his authority to act in his interest. The basic assumption of this theory is that the agent's behavior is egoistic and driven by self-interest, which leads managers to neglect the owner's initial interests and this consequently results in agency costs (Arrow, 1985). The principal (owner) aims to minimize these costs by implementing various management control mechanisms. To reduce agency costs, the monitoring role in the firm is often attributed to institutional investors (Hartzell, Starks, 2003). Ferreira and Matos (2008) emphasize that institutional investors may increase firm value using not only direct but also indirect control, i.e. by conducting continuous performance analyses. According to the authors, direct control involves expressing opinions in direct communication with the board of directors and exercising voting rights, to which investors as shareholders are entitled (Ferreira and Matos, 2008).

2. CHARACTERISTICS OF INSTITUTIONAL INVESTORS

According to the investment time horizon, institutional investors can be grouped into two classes: passive investors and active investors. Actively managed institutional investors adopt investment and management strategies procuring returns that outperform the market, which is necessarily accompanied by higher management expenses and transaction costs (Orsag, 2015). In contrast, passively managed institutional investors hold a diversified portfolio to make a profit based on long-term economic, i.e. market growth and development (Orsag, 2015). According to Cornett et al. (2007), active institutional investors have their representatives on supervisory boards when it comes to the Continental model of corporate governance. On

the other hand, Maug (1998) asserts that institutional investors that do not have their representatives on the supervisory boards of firms do not possess enough power to control firm management, hence the term passive investors. This thesis has been confirmed by many other authors such as Parrino, Sias, and Starks (2003), Gaspar, Massa, and Matos (2005). Due to their lack of control, investors of this type have no choice but to comply with management's opportunistic behavior (Mehrani, Moradi, and Eskandar, 2017). The results of previous research indicate that institutional investors maintain a long-term investment horizon to earn safe returns and allow for a constant and slow increase in share prices. This is indicative of the passive portfolio management style adopted by fund managers in institutional investors management firms (Nix and Chen, 2013). A long-term investment horizon entails investing in shares that are to be held in the portfolio for more than one year, whereas a short-term investment horizon refers to a holding period of just a couple of days up to a year at most (Carhart, 1997; Barber and Odean, 2000; Gaspar et.al., 2005; Cella, 2009). Previous studies have shown that institutional investors prefer investing in large, established firms, which are perceived as safe investments offering higher expected returns (Agrawal and Knoeber, 1996; Holland, 1998; Mallin, 1999; Tam and Tan, 2007). Accordingly, the goal which a particular institutional investor seeks to achieve by creating an investment portfolio includes an investment that can guarantee steady returns and annual dividend payments over a long-term investment horizon, i.e. shareholder wealth maximization. In their research, McCahery, Sautner, and Starks (2016) support the thesis that investors prefer long-term investment horizons, hence their interest in corporate governance. Furthermore, Annuar (2015) indicates that institutional investors are inclined to favor conservative investment strategies as they promise steady returns on low-risk investments. The decision to invest in a particular firm depends on a clearly defined business development strategy and an elaborate business plan, which investors consider to be important indicators of future returns, as well as the dividend policy. Additionally, particular importance is given to continual strategic assessments (Low and Arumugam, 2001).

3. METHODOLOGY

The research problem of the study is focused on examining the involvement of institutional investors in the corporate governance of companies in their portfolios. Previous research confirms the thesis that the presence of institutional investors in the ownership structure of joint-stock companies positively affects the value of companies by limiting the actions of company management to act solely for their benefit, thus reducing the gap between ownership intentions and business operations, which results in increased performance and financial position. Based on the literature researched so far, it is possible to define research questions by looking at institutional investors as homogeneous and heterogeneous groups:

- RQ1: Are institutional investors involved in the corporate governance of companies in their portfolios?
- RQ2: What is the nature of the impact of institutional investors on the business performance and financial position of companies in their portfolios?
- RQ3: Which are the main corporate governance control mechanisms used by institutional investors to control the corporate management of companies in their portfolios?
- RQ4: Does the impact of institutional investors on corporate governance and the level of involvement in the corporate governance process differ according to institutional investor management characteristics, type of institutional investors, and period of the investment time?

The theoretical contribution of this study is a critical analysis and a comprehensive and systematized review of existing theoretical and scientific findings from the domain dealing with the impact of institutional investors on the corporate governance of companies. To answer the defined questions, a mixed-method approach was used, that involves qualitative research through databases and after that in-depth analysis, i.e. qualitative coding. The analyzed papers were collected primarily from the Web of Science and additionally from Scopus and Ebsco databases. The period was not defined, so various articles, regardless of the year of publication, were included in the study, in total 2.483. More than 100 articles were identified as potentially relevant.

These articles were subsequently reviewed to assess their relevance concerning the research aims, and the following keywords were used: institutional investors, corporate governance, agency theory, business performance, financial position, portfolio investment style, corporate governance mechanisms. After the relevance analysis of the initial base of articles, only articles that are in line with the aims of this paper were analyzed.

4. FINDINGS

The following subsections present the literature review, i.e. findings of the identified literature on the involvement of institutional investors in the corporate governance of companies in their portfolio by analyzing characteristics of institutional investors. The paper outlines the attitudes of managers on the level of investors' involvement in the governance process to identify determinants of investment decisions, decisions to take corrective actions to enhance corporate governance, or decisions to leave the ownership structure.

4.1. Impact of Institutional Investors on Corporate Governance

Velury and Jenkins (2006) assert that the presence of institutional investors in the ownership structure of firms and their monitoring role change management's behavior. However, the question of the efficiency of their monitoring role, if it even exists, remains understudied. The available literature identifies two theories that try to explain the monitoring role of institutional investors in a firm. The first research group advocates institutional investors' initiative in the domain of corporate governance with the function of monitoring firm management (Fan and Wong, 2002; Velury and Jenkins, 2006; Hadani, Goranova, and Khan, 2011). Although Pound (1988) points out the problem of high monitoring costs their role entails, institutional investors, given their size, can afford them, unlike individual investors. An opposing view is that institutional investors do not have a monitoring role in the corporate governance of firms due to a lack of necessary knowledge despite having informational advantage; therefore, they collaborate with management (Admati, Petleidere, and Zechner, 1994; Mehreni, Moradi and Eskandar, 2017).

Morck, Shleifer, and Vishny (1986) assert that the size of institutional investors and their informational advantage provide a basis for launching an intensive initiative into effective management control. Unlike individual investors, institutional investors have more knowledge, and consequently more power to monitor a firm, and financial reporting as well (Mehreni, Moradi, and Eskandar, 2017). This thesis is supported by Bathala, Moon, and Rao (1994), who indicate that institutional investors have incentives to monitor financial reporting and are willing to penalize managers for the low quality of their financial reporting by selling a part of their shares. In cases of majority ownership, institutional investors may lay off managers if they are not satisfied with their work, which directly affects the performance outcomes of the firm. In their research, Chung et al. (2002) study the impact of institutional investors on the quality of financial reporting and information preparation methods. Their findings reveal that institutional investors' ownership simultaneously reduces managers' fees and increases the quality of accounting processes.

Research conducted by Davis (2002) upholds the thesis that institutional investors directly influence corporate governance by performing their monitoring role. According to the results, the average fraction of shares owned by institutional investors sufficient to encourage these investors to engage in corporate governance to improve firm performance stands at 5 % in Anglo-Saxon countries. There is a growing power of institutional investors as direct monitors of managerial behavior in developed economies. Ultimately, enhanced corporate governance increases the stock prices and performance of firms in their portfolios; however, increased dividend distribution decreased amount of fixed investment and growing productivity may also be a sign of positive effects. According to the findings, such an effect primarily concerns the analyzed insurance firms, life insurance, and pension funds, seeing that they have the greatest power of influence.

Chung, Elder, and Kim (2009) claim that good corporate governance practices improve the operational and financial transparency of a firm, thus reducing information asymmetry between the principal (owners) and the agent (managers) and resulting in a reduction of agency costs. Firms with good corporate governance practices in place consequently have more liquid stocks and lower transaction costs, which explains why institutional investors choose to include particularly such firms in their portfolios. Stock liquidity is more important to them than, for example, to individual investors. Moreover, Chung and Zhang (2011) indicate that institutional investors base their decision on the fact that well-governed firms require less management control and the liquidity levels of their stocks will increasingly grow, making it simpler for investors to perform their fiduciary duties. Chhaochharia, Kumar, and Niessen-Ruenzi (2012) also show a direct influence of institutional investors' ownership on firm performance in their study.

Their findings reveal that firms with institutional investors in their ownership structures operate more profitably and have more independent boards, which leads to the conclusion that institutional investors use their monitoring role in corporate governance in an effective manner. Jabeen and Ali (2017) investigate the role of institutional investors' ownership in monitoring managers of Pakistani firms over the period 2006–2014. They expand their analysis by classifying institutional investors into different groups and examining their impact on firm performance as monitors of managerial behavior. They measure operating performance by using the net profit margin ratio, while expense ratio and sales growth ratio are used as proxies for investment efficiency. Their findings show that open-ended investment funds take the most active role in disciplining managers to act in the interest of shareholders rather than their own, which indirectly enhances firm performance. Previous empirical research indicates that institutional investors' involvement in corporate governance intensifies as their shareholdings in a firm increase and their participation is directly conditional on their investment time horizon. Grossman and Hart (1987) claim that institutional investors who stay in the ownership structure longer access the information they need more cheaply and quickly, and therefore derive longer-lasting and more benefits from their involvement in the corporate governance process. McConnel and Servaes (1990) confirmed the positive correlation between firm performance as measured by using Tobin's Q and the fraction of shares owned by institutional investors. Additional empirical research identifies pension funds and insurance firms as the institutional investors whose ownership positively affects firm performance, considering that a long-term horizon is characteristic of these investors.

4.2. Corporate Governance Control Mechanisms and Institutional Investors

In the context of corporate governance, there are several control instruments. The objective of them all is to increase shareholder wealth while limiting the satisfaction and social goals of the company (Matic, Papac, 2010; Orsag, Sabol, 2014). Weir, Laing, and McKnight (2002) differentiate between internal (supervisory board structure, executive compensation, concentration of ownership, corporate reporting, relation with stakeholders) and external mechanisms of corporate governance (market for corporate control, legislative and regulatory framework, competition circumstances, protection of minority shareholders (Tipuric, 2008). Annuar (2015) asserts that institutional investors' participation in corporate governance is highly important in that they control company management and maintain the value of their investment. Previous studies distinguish three mechanisms used by institutional investors to control corporate management. Mallin (1999) indicates that the most important mechanism is (1) the exercise of voting rights at the general assembly of shareholders, which grants explicit power in management control to investors. Solomon and Solomon (2004) contend that financial reporting is insufficient and specifies (2) face-to-face communication with the board as the second management control mechanism. Based on Holland (1998), Annuar (2015) indicates that the domain of communication refers to the meetings at which company strategies and management quality are discussed, which ultimately improves the efficacy of governance devices. The third control mechanism refers to (3) cooperation with other institutional investors in the ownership structure of a company to create a representative group safeguarding their interests.

Answers obtained in an interview conducted by Nix and Chen (2013) support all of these points by revealing that the most common methods institutional investors use to exercise their power include communication with the board, the exercise of voting rights, and cooperation with other shareholders. In addition to the mechanisms enabling institutional investors to engage in corporate governance, some hindrances to their intervention in the management process have also been identified. One of the major challenges includes complex legislative frameworks imposing various investment restrictions on institutional investors, depriving them of the opportunity to take a more active role in the process of corporate governance (David and Kochhar, 1996). Gillan and Starks (2003) argue that another important obstacle is investors' lack of expertise to adequately advise corporate management in particular processes of their governance, as well as focusing too much exclusively on financial performance indicators. The question arises as to what institutional investors can do if they are not content with the governance of their portfolio company. Literature and previous research highlight two possible active choices investors have when it comes to management control: the first one includes communication with management, i.e. the exercise of voting rights, whilst the second one refers to investors' decision to leave the company by selling shares ("voting with their feet") (Hirschman, 1970 cited in McCahery, Sautner and Starks, 2016). As indicated above, institutional investors favor long-term investment horizons. Therefore, their threat to exit the ownership structure can be regarded as a disciplinary threat to management. Investors specify that they resort to this strategy only after having engaged in direct discussions with management, which illustrates how these two devices complement each other rather than substitute, with discussions typically occurring before a potential exit (McCahery, Sautner and Starks, 2016).

4.3. Determinants of Institutional Investors' Engagement in Corporate Governance

It has been established that institutional investors have a significant impact on the corporate governance of portfolio companies, but it is also necessary to identify various factors determining their ownerships engagement in corporate governance. Previous studies indicate several determinants such as institutional investors' objective, investment time horizon, investment strategy, portfolio structure, etc. Moreover, studies have shown that determinants may vary according to the type of institutional investor (investment funds, pension funds, insurance companies) and within the same type. Their engagement may range from a completely passive to a completely active management style (McNulty and Nordberg, 2016). An in-depth analysis of theoretical premises helps to identify five key determinants of institutional investors' engagement in corporate governance (represent in Table 1) which can be grouped into five classes.

Determinants	Source
Type of institutional investor	Maug, 1998; Ryan, Schneider, 2002; Parrino, Sias, Starks, 2003; Al-Hawamdeh, 2004; Gaspar, Massa,
Institutional investor's management style	Matos, 2005; Chen, Harford, Li, 2007; Conrett et al., 2007; Nix, Chen, 2013; Çelik, Isaksson, 2014;
Investment time horizon	Annur, 2015; McCahery, Sautner, Starks, 2016
Investment purpose	McNulty, Nordberg, 2016; Mehrani, Moradi, Eskandar, 2017
Legislative restrictions	

*Table 1: Key determinants of institutional investors' engagement in corporate governance
 (Source: created by the author of the paper)*

In studies conducted to this date, additional nine characteristics related to the company's business performance have been identified and they are represented in Table 2. These characteristics have an impact on the involvement of the institutional investor in the management process, on the one hand, but also, they can be observed as an important criterion by which these investors select a company in its portfolio.

Company's business performance characteristics	Source
Corporate Governance Control Mechanisms:	Bushee, 1998; Gompers, Metrick, 2001;
• voting rights at the general assembly of shareholders;	Mallin, 2001; Al-Hawamdeh, 2004; Hsu,
• communication with the management;	Koh, 2005; Chen, Harford, Li, 2007;
• cooperation with other institutional investors present in the ownership structure	Ferreira, Matos, 2008; Jiang, Anandaraman, 2009; Iturriaga, Crisóstomo, 2010;
Determinants at the level of companies' characteristics:	Mandacı, Gumus, 2010; Afza, Mirza, 2011; Chung, Zhang, 2011; Michaely, Roberts, 2011; Fung, Tsai, 2012; Nix, Chen, 2013; Vintilă, Gherghina, 2014; Annuar, 2015; McCahery, Sautner, Starks, 2016; Abdallah, Ismail, 2017; Jabeen, Ali, 2017
• Business Performance	
• Return on asset (ROA)	
• Return on equity (ROE)	
• Sales growth rate	
Financial position	
Firm size	
Firm age	
Stock liquidity	
Yield volatility	
Dividend payments	
Business strategy	

Table 2: Company's business performance characteristics
 (Source: created by the author of the paper)

By engaging in corporate governance, institutional investors perform not only their ethical but also fiduciary duties. However, they also serve a far more important purpose using effective capital allocation and management control, thus directly fulfilling their principal function – maximization of shareholder wealth. The overall observation that shareholders strive to gain returns on the invested capital, therefore choosing to invest in transparent companies whose value is expected to increase in the long term, is consistent with the relevant theory. Stakeholders, as much as institutional investors, are expected to continuously monitor the performance of a company to control the capital they invested themselves. If they duly fulfilled their primary function, shareholders will indirectly provide the whole market with the necessary information, which will result in the employment of new capital in particular companies, i.e. more effective allocation of capital employed at the moment. Engagement in the corporate governance of a company requires institutional investors to be highly informed, which is to be ensured by the company. This information is used primarily in discussions of crucial business issues such as development strategies, dividend policy, etc. In this manner, institutional investors contribute to the value-added of companies and help to enhance their financial position and performance.

5. CONCLUSION

Institutional investors intervene in the corporate governance process primarily using the three fundamental control mechanisms: (1) the exercise of their voting rights at general assembly meeting, which grants them explicit power in the fundamentals of corporate governance control, (2) direct communication with the management to discuss strategies for the future development of the company, and (3) cooperation with other institutional investors in the ownership structure of the company, whereby all parties make uncoordinated, but synergistic efforts to solve issues. This illustrates the underlying principle of investors' practices – long-term investing, which protects both their investment and the interests of their shareholders. Following the theory, investors strive to gain returns on the invested capital, therefore they choose to invest in transparent firms whose value is expected to increase in the long term. By doing so, not only do institutional investors fulfill their interests as the principals to the firm, but also the fiduciary interests they have in their relationship with shareholders, i.e. stakeholders. It is in their interest to engage in the firm management process to ensure higher returns for their investors and attract new investors in this manner; consequently, the entire management firm will generate more profits. Under theoretical assumptions, the analysis identified the indicative importance of

financial leverage as a kind of investment risk measure. The results are consistent with the study conducted by Cella (2009), which indicates that solvency has a disciplinary effect on firm managers and may discourage them from making certain investments, especially when there is information asymmetry between the principal and the agent. The analysis also identified a positive significant correlation between the sales growth rate and the financial position of firms, which represents an investment opportunity for the analyzed investment and a factor taken into consideration upon deciding whether to invest in a particular firm. The analyzed investors invest in firms with dividend policies, clearly defined development strategies, and elaborate business plans, which they regard as important indicators of future returns, and they particularly emphasize the importance of continual strategic assessments as well. The results imply that the dividend policy has a disciplinary effect on the behavior of managers in firms, and by extension on the level of business growth. Financial leverage and dividend policy together make up a complementary device for controlling managerial discretion. Therefore, it can be concluded that institutional investors co-exist with good practices of corporate governance implemented by joint-stock firms, which ultimately leads to synergistic efforts in management control resulting in a better business performance and increased firm value.

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Creating and Designing Sustainable Management on the Global Level

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Abstract

In the domain of sustainable development, management has great importance because its creativity and knowledge undoubtedly contribute to the improvement of the economic environment. In overcoming the global economic crisis, a society based on the knowledge and concept of sustainable development plays the largest role in the economy of any country. The concept of sustainable development implies favoring learning and developing an organizational culture in business entities. It is necessary to establish new social values based on the knowledge, creativity, and ability of human resources. In other words, there is a need to educate and create quality management with a tendency to transform the current society into a learning society. Such a society, through proper and well-defined sustainable development strategies, would be a society that thinks of tomorrow, i.e. on the future. The paper aims to point out certain forms of management and to transform management as a science in terms of favoring sustainability in business as well as in all spheres of social life. Authors consider designing as a process of good development strategy, while creation is considered as a concrete implementation of that good strategy. Sustainable management at the global level implies the general approach of a new way of managing all activities of human society. The focus is on knowledge-based society, sustainable development principles, development strategies and environmental policies, cleaner production, biodiversity conservation, and socially responsible business. The authors will also present an example of good practice in Australia, as the country in which management at the national level applies social responsibility, especially in the social sphere of sustainable development. It will be considered the sustainability of the Australian pension system, i.e. the model applied in this country.

Keywords: Development strategies, environment, social insurance, social responsibility, sustainable development

1. INTRODUCTION

Because the modern world is already faced with the need for a global common responsibility for development following the needs of humanity and nature, the moral reasons of today's generation must be strong in terms of adequate chances for future generations' development and survival. This way of thinking is based on the fundamental principle of moral justice, in other words, that all people have equal rights for freedoms that will be not contradicted the freedoms of others. The right of the present generation to exploit resources and to a healthy environment must not be compromised the same right of the future generations (Ilic, Djukic and Simonovic 2021). The concept of sustainable development implies balanced economic, social and cultural development without environmental threats. This will also enable the development of future generations at the same or higher level. The essence of the concept of sustainable development is the correlation between economic and environmental development, respecting the legality of ecological systems.

This concept is aimed at rational use of natural resources and on raising the quality of the environment but also the quality of life. For achieving sustainable development, human society must establish new social values based on knowledge, creativity, and human resource capacity, in other words, to create quality management with a tendency of transforming the present society into a future, learning (Mensah 2019; Djukic and Ilic 2020a).

2. KNOWLEDGE-BASED SOCIETY

Creating a society based on knowledge and sustainable development involves fostering the coordination of key factors such as investment in education, research and development, and practical application of research results. The use of information and communication technologies is also a way of expanding and acquiring knowledge. The level of education of the entire population is one of the basic factors influencing the formation of social knowledge bases (Ilic and Djukic, 2020b). In this sense, the higher education system is being upgraded at the society level, adequate training of human resources carried at the level of economic entities. Management plays a key role in human resource education. Viewed through history, economic development was based primarily on the dominant participation of natural factors and physical labor within the concept of an agrarian society (Djukic and Ilic, 2021). During the expansion of industrial society, both in production and in commercial activity, the most important productive factor was real and financial capital (money, industry, energy). Technological developments have led to the participation of physical labor, including material technology, as well as natural and financial resources. During the twentieth century, there was a "post-industrial society", an "information society", or so-called a "weightless economy" dominated by intangible factors (Krstic and Vukadinovic, 2008). In the human society where the economy is based on knowledge and comparative advantage, the key production factor becomes the whole set, or complex of intangible factors. Information, knowledge, skills, and culture are factors that are gaining economic impact and increasing market value. Significant changes concerning the creation, collection, processing, and use of information are happening today and these changes are conditioned by the expansion of the information services sector. Massive offerings and the increasing availability of information-based services are leading to a rapid reduction of their prices, and further, open opportunities for their use by an unlimited number of users. This data leads to the conclusion that knowledge is unlimited and that its "division" increases the richness of knowledge. Therefore, without good and quality management at both the micro and macro levels, this is impossible to achieve knowledge, in other words, the "know-how" (Vujic, 2000).

3. SUSTAINABLE DEVELOPMENT PRINCIPLES AND ENVIRONMENTAL DEVELOPMENT STRATEGIES

Modern civilization has developed on the paradigm of constant material growth, encouraging unscrupulous consumption of natural resources. The consequences of this way of thinking and behaving are more than known on a global level. Humanity is entering the third millennium with major environmental problems at the global level, such as (<http://www.endemit.org.rs>): damage of biosphere and its ecosystems; demographic explosion - 10 billion expected by 2040; global climate change; exhaustion of natural resources; waste in unmanageable quantities, and damage to human health, etc. On the one side, industrialization makes it possible to improve living standards, but on the other side, it has a negative impact on the quality of the environment and human health. It is inevitable for humanity to finally realize that a further strategy for the survival of the whole Planet (and society) depends on a different attitude towards the environment. The ecological crisis is only an inseparable part of the civilizations' "great events". First of all, it is part of a deep crisis of modes of production, consumption patterns, and economic growth. The second part of the crisis is losing basic human values. Such a way of life leads human society in a condition that is not balanced with nature. Balance can be achieved with fundamental socio-cultural alternatives in new modes of production and consumption. Preserving and improving the environmental system is an inevitable feature of the modern world. The reduction of pollution and pressure on the environment can be achieved through the use of natural resources by economic and other entities, but in a way to ensure their availability for future generations. Good

environmental development strategies must be implemented for this purpose. Businesses, i.e. companies as well as management at the social level, should rely on the following postulates: 1. Establishment of a system for protection and sustainable use of natural resources, i.e resources that include: air, water, soil, minerals, forests, etc.; 2. Strengthening synergies and achieving significant effects between environmental protection and development policies of other sectors; 3. Investing in reducing environmental pollution and developing clean technologies; 4. Reduction of high energy intensity of the economy of the Republic of Serbia and more efficient use of fossil fuels; 5. Encouraging the use of renewable energy sources; 6. Planning for sustainable production and consumption and reducing waste per unit of product; 7. Protection and conservation of biodiversity. These elements, like environmental factors, depend to a large extent on CSR in sustainable development.

4. SUSTAINABILITY DEVELOPMENT AND SOCIAL PRINCIPLES AND SOCIAL SECURITY

Global principles of social security are defined in Convention No. 102 (1952), as an international treaty. It recognizes minimum standards and human rights based on the sustainable development of social protection. The principles are also used as a basis for social rights and to adopt national strategies and models in the field of social protection. The principles include: "1. responsibility of the State, 2. rights defined by law, 3. minimum levels of protection for both contributory, and non-contributory schemes, 4. collective financing and financial sustainability, 5. participatory management, and 6. transparency and compliance mechanisms" (Markov et al., 2019). The achievement of results in the field of universal social protection is reflected in: "reducing poverty and inequality - lessens social tensions and conflict, and builds political stability; increasing consumption and aggregate demand – support crisis response and structural change and promotes economic growth; better access to food and better nutritional status and higher utilization of health services – improved health; higher school attendance and reduction in child labor – better educational performance; facilitates the search for jobs and riskier decision-making – promotes productive employment and entrepreneurship" (Pinheiro, 2017). Convention No 128 (1952) defines the obligation of pension benefits and standards for the financing of pension systems. Governments are responsible for the adequacy of pension benefits and take steps to ensure the sustainability of the pension system.

5. ENVIRONMENTAL AND SOCIAL SECURITY POLICY

Establishing an environmental management system in business entities, maintaining it, and continually improving it, while improving the quality of services, is one of the priority tasks in achieving a long-term business policy at the state level. Contributing to environmental protection can be achieved by preventing or reducing the negative impacts of harmful business activities, processes, and services. In addition to protecting the environment, the primary task of every organization as well as of the state (each state) is to care for its employees. When an employee completes their working life, their (states, organizations) care should not be less. People who have become retirees must still have basic life benefits, nursing care, and necessary assistance. To care for retirees, it is necessary to establish a sustainable pension system that will be written in detail. Following the example of the Serbian company "MIVA" from Indjija, the following environmental measures are presented, which this organization applies (<http://www.miva.rs/Politika>): 1. Enforcement of laws and regulations in the field of environmental protection; 2. Constant improvement of the organization of work for the rational use of raw materials, energy, and water, as well as reducing emissions and preventing water and soil pollution; 3. The tendency to reduce total waste as well as eliminate waste, which cannot be processed in a non-threatening manner; 4. Continuous improvement of environmental performance; 5. Environmental training to gain new knowledge and raise awareness of all employees about the importance of preserving it; 6. Establishing effective communication with all stakeholders and other relevant organizations to better share environmental information; 7. Impact on suppliers, suppliers, and subcontractors that they too take action on environmental protection; 8. Make the environmental policy available to the public. In business entities, top management should take responsibility for implementing such a policy. However, based on the fact that human capital is one of the most important resources of any state, it is necessary to emphasize the promotion of this

(human) capital. Employee care is a concern for the entire society and it has to be in the first place. What happens when an employee completes his or her work life? What is the situation in Serbia and what is the situation in other parts of the world? It can not be thinking and speaking about environmental protection unless society does not care for its senior citizens, for those who have lost the possibility to work, for retirees. How to establish a sustainable pension system and whether such a sustainable system is operational? In the following text, the authors will give an overview of the social component of sustainable development, the pension system for which the top management of the state (any state) is responsible. Global management would thus really gain in importance and could be said to have been applied globally (Schildberg and Wodsak, 2019). It is further explained that in many countries of the world has been achieved in an impressive way the welfare system and social security for all residents. In the process of adopting an adequate strategy, formulating social policy, and implementing social protection, you have had the involvement of governments, social partners, and other numerous key actors. The authors Schildberg and Wodsak presented that many other countries' experiences show that the effective participation of workers, employers, and other stakeholders contributes to the adoption of adequate social policy and its implementation, which is in line with the Social Welfare Recommendations (No. 202). For a social security strategy and sustainable social development, effective governance is important for defining clear goals. Adequate funding is needed to implement the social security strategy coordinated roles and social responsibility. In the report "Old-Age Income Support in the 21st Century", the World Bank defined in 2005, in addition to the existing three, two more pillars. The first zero pillar was introduced to provide minimum social security based on social pensions and, fifth, for family social protection, with public pension plans, administered by the state. The second pillar introduced is the informal sector which represents non-financial arrangements/informal support. This modality aims to provide minimum social protection at the local, regional or national level to all socially excluded older categories of the population, including those who have not or have partially participated in their work in the formal economy. Social pensions provide minimal income for the livelihood and absolute standard of living of the elderly. They are financed mainly from public budget revenues (Holzman and Hinz, 2005). Rudolph (2016) indicated that the implementation of social pensions depends on management as well as on management in the area of the pension system and social protection, which as a form of public pension is implemented so far with only about 50% in countries around the world. Experts in the field of pension insurance with the view that the implementation of social pensions is generally a long-term process, that before the introduction of the zero pillar, relevant experts are hired to "carefully" analyze, plan and evaluate the social program (Rudolph, 2016). The research has discussed the influence of state policy, political institutions, and the impact of the application of the democratic principles of the political system to the introduction and commission of social pension when based on results. Democratic systems are positively correlated with social pensions. In the result of hypothesis: "the strength of governments and ist socialist orientation increase the probability of social pension provision, ceteris paribus", Rudolph concluded that in political systems both democratic and autocratic the introduction of social pensions can be a means of raising votes by older voters in political elections. This is especially important in countries dominated by the elderly, such as in Serbia due to the migration of young people and "brain drain". In further analysis, Rudolph tested the hypothesis: "international leverage through trade and aid provision increases the probability of social pension implementation, ceteris paribus" and in the empirical analysis using the variables: economic and demographic, political system, and international influence variables. It is indicated that the decision about providing social pension may be different. It is estimated according to Rudolph's methods and results, that there is a conditional probability that the country has a long term social pension model as follows in Formula 1:

$$P\left(Y_{it} = \frac{1}{X_{it-1}}\right) = \int(\alpha + \beta'X_{it-1} + \delta_r + \Lambda_t + \varepsilon_{it}) \quad (1)$$

$i = 1, \dots, N, t = 1, \dots, T$. Y_{it} indicates whether or not a country i has a noncontributory pension in period t , X_{it-1} is a vector of covariates, α is a common constant, β are parameters to be estimated and ε_{it} is the idiosyncratic multivariate normal error term. Rudolph presented link ($f(\cdot) = \phi(\cdot)$) to modulate binary dependency variables.

In doing so, it controls the dependence of the duration of application social pensions. The analysis found that the higher the expenditures, the higher the social benefits, respectively that it is a positive and meaningful relationship between government spending and social security benefits, at 5 percent. The analysis showed that social pensions and their effectiveness are more important for developing countries and demographic factors. However, this requires the introduction of state social funds. For this reason, the greater introduction of social pensions is taking place in more developed countries. Based on the (WSPR, 2017), social protection for the elderly is practiced almost all over the world. Social protection is a key component of sustainable development. In the world, about 68% of pensioners receive or have no pension. Although universal pensions are common in many countries, in countries with “poorer” economies, less than 20% of old people receive pensions from the state. Also, many (older people) are dependent on the material support of their families because of minimal pensions (WSPR, 2017). Contributions for Social security are accounted from the salary of employees, in a certain limit and percentage amount following legal regulations. Income from social security contributions intended for social security programs. These contributions are paid by the employer to the gross salary of the employee and treated as an operating expense, the portion that the employee pays is taken from the gross salary. Serbia's Social Security Rate averaged 36.83 percent from 2004 to 2019. The highest percentage was reached 37.8 in 2015 and the lowest percentage was 34.05. in 2004, and 37,05 in 2019 (Trading Economics, 2020). The share of social protection expenditures is determined according to the government classification, as a percentage of total GDP expenditure, income earmarked for social protection, at the republic and local levels of governments. According to Trading Economics Site, the Social Security Rate in Australia stands at 11.50 percent. The social security rate is a labor income tax levied on businesses and employees. From Social Security tax contributions are funded social and health care and social programs and other benefits. The amount of the Social Security Rate from 2010 to 2013, was 10.50 percent and 10.75 percent in 2014. The contribution rate increased significantly from 2015 to 2019, namely: 11.25 percent to 11.50 percent (Trading Economics, 2020). Figure 1 shows the specific Social Security Rate in two countries from 2010 to 2020:

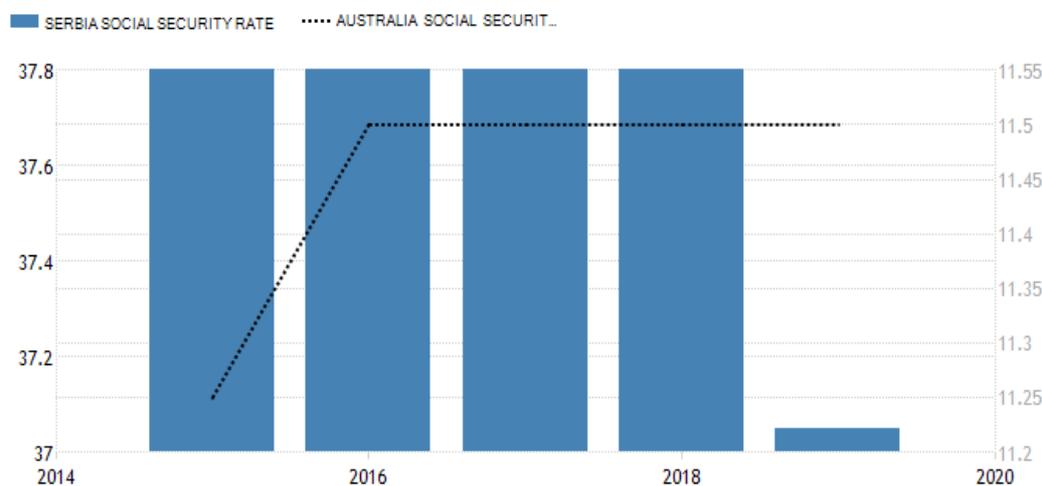


Figure 1: Social Security Rate in Serbia and Australia, February 2010- February 2020
 Source: <https://tradingeconomics.com//social-security-rate>

The "main key messages" for Serbia, to implement the social component (1.3) of the sustainable development of cohesion Europe to contribute to regional and global transformation, the Serbian government has identified six strategic directions for the development of sustainability for each individual with projections until 2020, namely: 1. connecting with European partners and the world for global integration of sustainable development, 2. achieve faster inclusive and sustainable development based on economic scientific and innovative resources, 3. efficiency and effectiveness of public service, 4. promotion of human rights and security, 5. education for the twenty-first century, 6. trans-transformative digitization (RS, 2019).

Australia has over the past 26 years "recognized" the importance of sustainable development. State management has established well-being and well-being for all residents in the country. Legislation and policies The Government of Australia has adequately targeted environmental, social, and economic development, in line with the Global Sustainable Development Goals (SDGs). Through their programs and plans, activities are aimed at ensuring that businesses, organizations, and each individual have opportunities to access existing problems for collective activities, partnerships in problem-solving. Although it has achieved economic success through economic, trade, industrial reforms, there are a "main key message": that "politicians", or government, should continue to address long-standing problems, such as improving health, economic, justice, and well-being outcomes for Australia's Aboriginal and Torres Strait Islander peoples (HLPF, 2018). Australia, as an example of good practice, has achieved the goals of global sustainable development, thanks to the knowledge, experience, and skill, through partnerships and developed economic sectors, a large number of highly educated and engaged people in quality institutions. In this regard, Australia is ready to contribute with their expertise to other countries and to share knowledge of new technologies and other development areas to help other countries. According to (HLPF, 2018), through legislation, policies, and programs at the federal, state, and territorial level human rights are respected. All accounts and illegal instruments are judged by the federal parliament that must be compatible with federal and international human rights treaties, ratified by Australia. In the Report at each institutional level, jurisdictions have been introduced that respect the rules and regulations.

6. DISCUSSION – THE SIGNIFICANCE OF SOCIALLY RESPONSIBLE BUSINESS IN SUSTAINABLE DEVELOPMENT

Corporate Social Responsibility (CSR) is, in essence, an awareness of the new position and importance that companies have in the contemporary, global society, and is reflected in the responsibility that arises from that awareness. The practice of this kind of business is related to the overall activity of an enterprise, ie: what it produces, how it buys and sells, whether it obeys the laws, how it treats its employees, whether it invests in the local community and how it contributes to environmental protection (Corporate Social Responsibility in Serbia, 2005) Corporate social responsibility can bring the following business benefits: protecting and improving existing resources (human capital or the environment) on which the company's operations depend; forecasting, avoiding and reducing business risks and associated costs; increasing the financial efficiency of the company by reducing the cost of doing business; opening new business opportunities and new markets; protecting, building and enhancing the company's reputation, especially concerning consumers; the company becomes attractive to investors, educated and motivated workers. Many arguments are in favor of the existence of real business interest of a company for socially responsible behavior, and any business activity, including those related to incorporating social responsibility into its business, has a more or less direct interest. The first thing is certainly reputation, which no longer represents the intangible category, but is directly linked to the value of the company. The second argument, also related to employees, is their better motivation, greater loyalty, and the ability to attract better staff. In the social sphere, investing in education, working conditions, and adopting good relationships with employees can also contribute to productivity. Being socially responsible means not only fulfilling legal obligations but more than that, investing in human capital, the environment, and relationships with other stakeholders.

7. COMPANY MANAGEMENT LIMITATIONS ON CORPORATE SOCIAL RESPONSIBILITY

The need to implement the concept of social responsibility in the process of corporate governance arises due to increasing pressure from the state, consumers, and other stakeholders for environmental protection, employees, human rights organizations, and others. The key constraints to the broader implementation of the CSR concept at home are most often. In a society that has been stagnant for many years regarding social norms, social and economic development, there are opportunities to mitigate or eliminate the negative phenomena of poverty and social inclusion through adaptive collaborative management (IGSASG, 2019). This implies management that is desirable in complex and insecure systems. The key constraints to the widespread

implementation of the CSR concept at home are most common: unstable political conditions; inadequate legislation; insufficient awareness of the benefits and possibilities of implementation; insufficient support from the state and other institutional infrastructures; management and employee resistance, and insufficient support from financial institutions (Figar, 2005). For social responsibility to be more prominent in the process of managing a company, it is necessary first and foremost to give the necessary support to the development of this concept. In the previous period, entrepreneurs were completely left to their abilities and personal finances. They were faced with an unfavorable environment in which they did business in the absence of advisory, financial, organizational, and any other support in the process of establishment and subsequent development. For the CSR practice to be more prevalent at the state level, the following steps need to be taken: Reduce taxes; lower interest rates with banks and other financial institutions; get support from governmental and non-governmental institutions; reform legal regulations in the field of environmental protection, labor, etc., and enable information sharing with other stakeholders. Due to the increasing importance of economic and social activities in Serbia, these topics are becoming more prominent. Stakeholders from all sectors start to think and talk about concepts such as sustainable development, corporate social responsibility, and resource engagement in all social sectors for the common good (Djordjevic and Urosevic, 2009).

8. CONCLUSION

The business performance of businesses in the global economy must be based on the principles of social responsibility and aligned with the requirements for environmental protection and improvement. Sustainable development guidelines are defined globally, which should strike a balance between economic development goals on the one hand and social development on the other while respecting the need for environmental protection. All this influences businesses to take a more serious approach to meet the goals of more stakeholders in their environment. The near future points to the need to incorporate the concept of social responsibility into corporate practice. To achieve the goals for the socially endangered and the poor, it is necessary to cooperate not only through dialogue but also through the Internet with partners, state domestic and foreign institutions, local authorities, academics and scientists, and stakeholders. Through social cooperation, processes such as dissemination of knowledge and information, mapping, and reporting, adequate living conditions are created for every socially endangered individual, both within the state and beyond. Management at the national, regional, and local levels is only required to implement social policy in an informed and knowledge-intensive society. In this connection, the appropriate approach to the principles of management by the state authorities is emphasized to ensure minimum living conditions for the socially disadvantaged, especially the elderly.

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Nexus Between Stock Market Performance and Manufacturing Growth in Nigeria

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Abstract

This study examined the nexus between stock market performance and manufacturing growth in Nigeria using data spanning between 1985 and 2020. Vector Autoregression (VAR) model was employed to examine the complex interaction between the variables. The result of the stationarity test through Augmented Dickey-Fuller (ADF) and Phillip Peron (PP) affirmed the use of VAR. the study concluded that stock market performance has a significant influence on manufacturing growth. Hence, the government should make a concerted effort by making appropriate monetary policy that will promote stock market performance that will lead to capacity growth of the manufacturing sub-sector.

Keywords: *Stock Market Performance, Manufacturing Growth, All-share Index, Equity, Industrial Loan*

1. INTRODUCTION

The studies on the stock market returns or performance have received considerable attention in recent times because stock market performance is considered to be one of the major determinants of macroeconomic performance in every country, Nigeria inclusive (Donatus, 2009 and Robert, 2008). Obadan (1998), opined that an active stock market contributes to changes in the general level of economic activities which can lead to sustainable economic growth. The majority of African countries are richly endowed with natural and mineral resources that ought to have exerted greater influence on their economic growth and if these resources are properly annexed with adequate capital needed, some African countries are supposed to be among the developed countries. Nazir, Nawaz & Gilani (2010) agreed that the stock market is an important pillar of the country's economy. Nigeria's Stock market has experienced remarkable progress since 1981 as evidenced by the major stock market performance indicators such as a number of listed companies, all-share price index, and market capitalization. More evidence from the Central Bank of Nigeria (2018) indicates that market capitalization for 1985 values at ₦6.6 billion and increase to ₦285.8 billion in 1996 but fell to ₦281.9 billion and ₦262.6 billion in 1997 and 1998 respectively. Stock market capitalization rose from ₦300 billion in 1999 to ₦13.18 trillion while another fall was witnessed between 2008 and 2009 with ₦9.56 trillion and ₦7.03 trillion respectively. Market capitalization then rose from ₦9.92 trillion in 2010 to ₦19.08 trillion in 2013 and later witness fluctuation. The stock market has played a vital role in Nigeria's economic development most especially in improving the private sector and proved to be an important source of capital or financial investment for the private sector. The bulk of the recapitalization of the banking sector was realized through the stock market. The manufacturing sector plays an important role as a driver of innovation, productivity growth, and technological change in the global economy. It is no doubt that the growth in the sector is the major factor that leads to the economic diversification of most economies of the developed countries of the world (Eze. Emeka and Ogbonna, 2019). Various measures have been taken by successive governments in Nigeria which led to the introduction of various reforms in the country. The major objective of these reforms was the diversification and restructuring of the productive base of the economy to enhance efficiency and reduce its dependence on oil exports. The Structural Adjustment Programme (SAP) as a reform strategy, introduced in 1986 to bail the country out of its numerous challenges had a favorable effect on agriculture but

a negative effect on manufacturing. The relative contribution of manufacturing production to GDP showed that SAP, indeed, triggered a shrinking growth of the manufacturing sector which contributed 8.7% to GDP in 1986. However, with the adoption of SAP, the manufacturing sector's relative share in output began to fall and reached 5.29% in 1989 and fell further to 4.96% in the 1990s. Despite these reform strategies, oil export is still expanding while the non-oil export is yet to improve appreciably (Awe, 2018). This shows that the reforms are not capable of diversifying the Nigerian economy which would have boosted manufacturing productivity to pave way for sustainable economic growth. The efforts of successive governments to promote manufacturing growth which has been identified as the engine room of economic growth and the major determinant in achieving the macroeconomic goal in the country have remained insignificant. This has generated a lot of debate among scholars. They partly attributed it to the lack of long-term funds that are needed to provide the impetus for inclusive growth and job creation in the sector. Kwode (2015) is of the view that long-term funding which is the bane of the manufacturing sector could be achieved through an active capital market that mobilizes long-term funds for the development of small and medium scale industries in Nigeria. While Offum and Ihuoma (2018) maintained that the performance of the capital market has not translated to remarkable growth of the Nigeria manufacturing growth. Ubesie & Ude (2019) also agreed that the stock market performed below expectation as a supplier of cheap and stable funds for manufacturers in Nigeria. Since there is a divergent view on the impact of the stock market on manufacturing growth, it is necessary to study the relationship among them from another angle. This critical issue has warranted a new frontier of research concerning the relationship that exists between stock market performance and manufacturing growth in Nigeria using the vector autoregressive (VAR) approach.

2. LITERATURE REVIEW

The issue of stock market performance and its impact on the growth and development of an economy has received considerable attention not only among academic researchers but policymakers who are not left out (Ifeoluwa and Motilewa, 2015). This is because stock market performance is one of the vital instruments of measuring the economic well-being of a nation. Given Obadan (1998), an active stock market contributes to changes in the general level of economic activities. It contributes to the economy directly or indirectly by mobilizing resources from the surplus sector of the economy for the benefit of those in need of funds. It mobilizes savings, creation of liquidity, risk diversification, acquisition and dissemination of financial information, and enhanced incentive for corporate control. The manufacturing industry has been one of the global development agenda as reflected in sustainable development goal is a key ingredient in the economic development process of developing nation, Nigeria inclusive. The manufacturing sector has the capacity of generating employment and reducing poverty increasing national productivity (Nyong, 2011; Ebong, Udoh, and Obafemi, 2014). Ly (2011) opined that the manufacturing sector can only thrive through adequate capital formation which the stock market usually serves as one of the major mobilization of financial resources for its development. The stock market has the potential of mobilizes the long-term financial resources needed by the manufacturing firms (Ogunsakin and Awe, 2020). There has been a growing concern recently by various scholars on the role of the stock market on economic growth and how it can help in making appropriate policies that can lead to sustainable economic development. Okpara (2010) investigated the impact of capital market performance on the growth of the Nigerian economy. The results showed that there was a long-run interaction between the growth of the economy (gross domestic product) and capital market indicators. From the results, one period lag of market capitalization, new issues, the value of shares traded, and turnover ratio had a significant impact on the growth rate of the gross domestic product in the country.

In the same line of research, Olowo, Oluwatoyin & Fagbeminiyi (2011), critically analyzed the efficiency of the capital market on the Nigerian economy for the period between 1979 and 2008. The results indicated that

the stock market indeed contributed to economic growth as all variables conformed to expectation. The major findings revealed a negative relationship between market capitalization and gross domestic product as well as a negative relationship between turnover ratio and gross domestic product while a positive relationship was observed between the all-share index and gross domestic product. Udoh & Ogbuagu (2012) used the total production framework and autoregressive distributed lag (ARDL) co-integration technique for Nigerian time series data covering the period 1970-2009. It was found that both the long-run and short-run dynamic coefficients of financial sector development variables had a negative and statistically significant impact on industrial production. In another development, Idyu, Ajekwe, & Johnmark (2013) determined the impact of the Nigerian capital market on the industrial sector component of the Nigerian gross domestic product, ascertain the impact of the Nigerian capital market on industrial loans issued by the stock exchange and determine the impact of the Nigerian capital market on average capacity utilization rates of the Nigerian manufacturing sector. An ex-post facto research design was adopted using secondary data to determine the level of impact on the growth of the Nigerian industrial sector for the period 1990 – 2009. The results showed that market capitalization has a positive significant impact on the industrial sector component of the gross domestic product and average capacity utilization rates of the manufacturing sector. However, the result revealed a non-significant impact of market capitalization on industrial loans of the stock exchange.

Also, Kwode, (2015) examined the role of the capital market in financing the manufacturing sector in Nigeria between 1970 – 2012. Using the ordinary least square method, co-integration test, and error correction method; the study reveals that there is a long-term relationship between capital market and the development of the manufacturing firms in Nigeria but the growth in capital market activities did not impact significantly on the manufacturing sector. The Nigerian manufacturing sector has been on the decline because of non-access to long-term funds from the capital market, high interest rates, volatile foreign exchange, and unstable electricity. Egbe, Joshua, Eja, & Uzezi, (2015) examined the relationship between capital market and industrial sector development in Nigeria, utilizing annual time series data covering the period from 1980 to 2012. The study adopted the co-integration test, Granger causality test, and the error correction mechanism (ECM) in the estimation of the relevant relationships among variables. The results of the short-run dynamics revealed that the capital market has a positive and significant impact on industrial output in Nigeria via market capitalization and many deals. However, the value of the transaction has a negative and significant impact on industrial output in Nigeria during the evaluation period. The results also showed that real gross domestic product has a positive and significant impact on industrial output in Nigeria, while exchange rate and gross domestic investment have a negative and significant relationship with industrial output in Nigeria. In the same view, Echekoba & Ananwude (2016) studied the nexus between index of industrial production and Nigeria stock market liquidity and the effect stock market liquidity has on industrial production from 1981 to 2015, through the applications of the Johansen cointegration test and its associated error correction model (ECM). The variables employed in the study were the index of industrial production and the value of stock traded ratio to gross domestic product. The result of the Johansen co-integration indicated that a long-run equilibrium relationship exists between the index of industrial production and stock market liquidity. The ordinary least square (OLS) revealed that stock market liquidity has a negative influence on the index of industrial production. Florence, Ogechi, Kingsley, Idika & Odili (2017) evaluated the impact of stock market liquidity and efficiency on the performance of the manufacturing sector in Nigeria. Applying unit root test and ARDL bounds test approach to co-integration for time series data ranging from 1985 to 2011. The study found that stock market efficiency and number deals were significant variables that explained the changes in the Nigerian manufacturing sector. Also, Salihu and Mohammed (2017), investigated the impact of the stock exchange on the manufacturing sector in Nigeria for the period 1980-2015, using the co-integration test and error correction model (ECM). The study found that there is a long-term relationship between the stock exchange and the development of the manufacturing sector in Nigeria, but the growth in stock exchange activities had an insignificant impact on the manufacturing sector in the economy. Owui, (2019) examined the impact of capital market indicators (industrial loan, equity, market capitalization) on industrial sector financing in Nigeria. He

employed ordinary least squares of multiple regression statistical techniques based on the analysis. His findings revealed there is a significant impact between industrial loan and the growth of industrial sector financing in Nigeria, there is a significant impact between market capitalization and the growth of industrial sector financing in Nigeria, there is no significant impact between equity and the growth of industrial sector financing in Nigeria. Based on the available literature, it is crystal clear that scholars did not agree on the relationship that exists between stock market performance and manufacturing growth. Therefore, this work will re-examine the relationship that exists between stock market performance and manufacturing growth in Nigeria by studying complex interactions among the variables. This will shed more light on the issue and provided useful insights into the real relationship among them.

4. METHODOLOGY

The study adopts Vector Autoregressive (VAR) model with its components to measure the complexity between the stock market and manufacturing growth in Nigeria. Investigation of shocks transmission is imperative in ascertaining the sensitivity of these variables among one another which is the best measured by impulse response function and forecast error variance decomposition of VAR model (Gujarati and Sangeetha, 2007). The model for the study is hereby specified:

$$Z_t = \mu + \sum_{i=1}^p \beta_i Z_{t-1} + \varepsilon_t$$

Where Z_t is the vector of both dependent variable defined as MOT and explanatory variables (ASI, EQT, INDL and INTR)

Where:

MOT = Manufacturing Output

ASI = All Share Index.

EQT = Equity.

INDL = Industrial Loan.

RINT = Real Interest Rate.

5. RESULTS

4.1 Testing the Normality in the Distribution of the Data Set in the Study

Table 1. Descriptive Statistics

	MOT	ASI	EQT	INDL	INTR
Mean	0.022867	-0.888681	0.349939	0.418056	18.26861
Median	0.021985	-0.884067	0.382458	0.010000	17.77000
Maximum	0.217971	-0.778202	1.870492	6.520000	29.80000
Minimum	-0.175105	-0.965580	-0.316576	0.000000	9.250000
Std. Dev.	0.098163	0.039255	0.439648	1.243499	4.058012
Skewness	0.023259	0.332185	1.233796	3.891151	0.559292
Kurtosis	2.591647	3.158629	5.790233	18.24228	4.337746
Jarque-Bera	0.253374	0.699825	20.81161	439.3371	4.561193
Probability	0.881009	0.704750	0.000030	0.000000	0.102223
Sum	0.823211	-31.99250	12.59781	15.05000	657.6700
Sum Sq. Dev.	0.337258	0.053933	6.765162	54.12016	576.3612
Observations	36	36	36	36	36

Source: Author computation (2021).

Descriptive statistics result in table 1 helps to predict the nature and behavior of the data distribution. The arithmetic mean value and median value of world MOT, ASI and INTR are symmetrical while those of EQT and INDL are asymmetrical in their distribution. From the results, it was revealed that MOT and ASI, mirror normal skewness, while EQT, INDL, and INTR are positively skewness. Kurtosis result in table 1 shows that

ASI is mesokurtic which depicts normal distribution, EQT, INDL, and INTR are leptokurtic which depicts a peak curve, MOT on the other hand are platykurtic which depicts a flattened curve. Jarque-Bera statistics confirmed that MOT, ASI, and INTR are normally distributed while EQT and INDL are not normally distributed.

4.2 Testing the Correlation among the Series using Correlation Matrix

Before proceeding to other estimations in the study, it is essential to carry out a test to ascertain if there is an interplay among the variable of interest. This is done through a correlation matrix.

Table 2

	MOT	ASI	EQT	INDL	INTR
MOT	1	-0.2350	-0.3743	-0.2304	-0.0136
ASI	-0.2350	1	0.8780	0.0423	0.2711
EQT	-0.3743	0.8780	1	0.0863	0.1933
INDL	-0.23048	0.0423	0.0863	1	0.0301
INTR	-0.0136	0.2711	0.1933	0.0301	1

Source: Author computation (2021).

The result in Table 2 gives us a preliminary idea of the relationship existing among the series. The result indicates that all the variables were negatively correlated with MOT.

4.3 Time Series Properties of the Variable.

Table 3. Unit root test

Variables	Level			Order of Integration
	P.P Statistics	ADF Statistics	5% critical Value	
MOT	-4.8226	-4.8114	-2.9484	I(0)
ASI	-3.7643	-3.6785	-2.9484	I(0)
EQT	-5.0796	-5.0797	-2.9484	I(0)
INDL	-4.5647	-4.5711	-2.9484	I(0)
INR	-4.0622	-4.0648	-2.9484	I(0)

Source: Author computation (2021).

The results of both Phillip Peron (PP) and Augmented Dickey-Fuller (ADF) unit root test presented in Table 3 confirm that all variables are stationary at level. The results revealed that all the variables are all order zero, this indicates that the condition for cointegration is not met. Hence, the best estimation technique as suggested by Gujarati and Sangeetha (2007) is to result in the short-run dynamic estimation using Vector Autoregression (VAR) since the long-run equilibrium relationship is not achievable. This justifies the use of VAR for the analysis in this study.

4.4. Selection of Appropriate Lag Length

Table 4. Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
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0	-225.6375	NA	0.078097	14.47734	14.75217	14.56844
1	-146.7014	123.3377	0.005570	11.79383	13.71761	12.43151
2	-109.7705	43.85544	0.006783	11.73565	15.30838	12.91991
3	-42.68922	54.50351	0.002117	9.793076	15.01476	11.52392
4	81.39369	54.28627*	7.25e-05*	4.287894*	11.15853*	6.565316*

Source: Author computation (2021).

The result in table 4 indicates that all the criteria suggest four lag for the model. Therefore, four lag variable was selected.

4.5 Vector Autoregression Estimate

Table 5

	MOT	ASI	EQT	INDL	INTR
MOT(-1)	-0.258158 (0.28080) [-0.91938]	-0.022939 (0.11857) [-0.19346]	-0.104919 (1.39807) [-0.07505]	5.586078 (5.35409) [1.04333]	-18.61852 (10.3065) [-1.80648]
MOT(-2)	0.018007 (0.31171) [0.05777]	-0.012352 (0.13163) [-0.09384]	-1.356625 (1.55198) [-0.87413]	-4.282346 (5.94351) [-0.72051]	13.46411 (11.4411) [1.17682]
MOT(-3)	-0.030114 (0.25753) [-0.11693]	-0.048041 (0.10875) [-0.44176]	-0.490433 (1.28224) [-0.38248]	3.519894 (4.91050) [0.71681]	-18.35117 (9.45262) [-1.94138]
MOT(-4)	0.083938 (0.26603) [0.31552]	0.070857 (0.11234) [0.63074]	0.305419 (1.32455) [0.23058]	-0.151633 (5.07256) [-0.02989]	13.08303 (9.76459) [1.33985]
ASI(-1)	1.153456 (1.91849) [0.60123]	0.501144 (0.81014) [0.61859]	5.614634 (9.55205) [0.58779]	-38.75117 (36.5809) [-1.05933]	135.9314 (70.4175) [1.93036]
ASI(-2)	-1.121488 (2.44838) [-0.45805]	-0.776358 (1.03390) [-0.75090]	-1.725774 (12.1903) [-0.14157]	42.00151 (46.6846) [0.89969]	84.93540 (89.8670) [0.94512]
ASI(-3)	-3.239875 (1.80684) [-1.79311]	0.917711 (0.76299) [1.20278]	11.02987 (8.99619) [1.22606]	-17.52936 (34.4522) [-0.50880]	-98.89917 (66.3197) [-1.49125]
ASI(-4)	-2.779760 (1.33890) [-2.07615]	0.173765 (0.56539) [0.30734]	2.402187 (6.66633) [0.36035]	-2.958936 (25.5296) [-0.11590]	4.092100 (49.1440) [0.08327]
EQT(-1)	-0.055316 (0.16554) [-0.33415]	-0.013745 (0.06991) [-0.19662]	-0.414320 (0.82423) [-0.50268]	3.568129 (3.15649) [1.13041]	-12.12325 (6.07618) [-1.99521]
EQT(-2)	0.095642 (0.19987)	0.010146 (0.08440)	-0.543561 (0.99516)	-2.673944 (3.81111)	-6.989484 (7.33632)

	[0.47851]	[0.12021]	[-0.54620]	[-0.70162]	[-0.95272]
EQT(-3)	0.230179 (0.12908) [1.78324]	-0.041190 (0.05451) [-0.75567]	-0.580089 (0.64268) [-0.90261]	1.367686 (2.46123) [0.55569]	6.365374 (4.73783) [1.34352]
EQT(-4)	0.278782 (0.11213) [2.48627]	-0.046941 (0.04735) [-0.99137]	-0.583746 (0.55828) [-1.04561]	0.473328 (2.13802) [0.22139]	4.094455 (4.11565) [0.99485]
INDL(-1)	-0.015518 (0.01722) [-0.90114]	-0.002421 (0.00727) [-0.33297]	0.035495 (0.08574) [0.41397]	0.389261 (0.32836) [1.18548]	-0.166363 (0.63208) [-0.26320]
INDL(-2)	0.003175 (0.01658) [0.19146]	-0.003595 (0.00700) [-0.51348]	0.000928 (0.08256) [0.01124]	-0.166900 (0.31616) [-0.52790]	0.399135 (0.60860) [0.65583]
INDL(-3)	0.005891 (0.01882) [0.31308]	0.000743 (0.00795) [0.09347]	0.035012 (0.09369) [0.37372]	-0.171733 (0.35879) [-0.47865]	0.001940 (0.69066) [0.00281]
INDL(-4)	-0.005030 (0.01878) [-0.26786]	0.007861 (0.00793) [0.99140]	0.169088 (0.09350) [1.80851]	0.309716 (0.35805) [0.86500]	0.769284 (0.68925) [1.11612]
INTR(-1)	-0.001055 (0.00684) [-0.15430]	0.004783 (0.00289) [1.65717]	0.037016 (0.03403) [1.08770]	0.110781 (0.13033) [0.85002]	0.459703 (0.25088) [1.83238]
INTR(-2)	0.006739 (0.00681) [0.98984]	-3.72E-05 (0.00287) [-0.01292]	-0.023512 (0.03390) [-0.69363]	0.009565 (0.12981) [0.07369]	-0.051067 (0.24988) [-0.20437]
INTR(-3)	0.000542 (0.00694) [0.07807]	0.003285 (0.00293) [1.12116]	0.036962 (0.03455) [1.06986]	-0.002406 (0.13231) [-0.01818]	-0.068478 (0.25469) [-0.26887]
INTR(-4)	-0.003035 (0.00612) [-0.49624]	-0.000813 (0.00258) [-0.31471]	-0.007856 (0.03045) [-0.25799]	-0.030019 (0.11662) [-0.25741]	-0.298118 (0.22449) [-1.32796]
C	-5.542887 (2.66759) [-2.07786]	-0.269187 (1.12647) [-0.23897]	15.62686 (13.2818) [1.17656]	-17.80732 (50.8645) [-0.35009]	132.7443 (97.9131) [1.35574]
R-squared	0.689354	0.708828	0.671076	0.401519	0.717472
Adj. R-squared	0.124542	0.179424	0.073032	-0.686629	0.203786
Sum sq. resids	0.087928	0.015679	2.179732	31.96823	118.4599
S.E. equation	0.089406	0.037754	0.445149	1.704759	3.281627
F-statistic	1.220502	1.338918	1.122118	0.368993	1.396713
Log likelihood	48.94554	76.53236	-2.421487	-45.39014	-66.34744
Akaike AIC	-1.746596	-3.470772	1.463843	4.149384	5.459215
Schwarz SC	-0.784707	-2.508883	2.425732	5.111273	6.421104

Mean dependent	0.016816	-0.888809	0.367074	0.467500	18.87250
S.D. dependent	0.095554	0.041678	0.462352	1.312663	3.677683

Determinant resid covariance (dof adj.)	2.65E-06
Determinant resid covariance	1.27E-08
Log-likelihood	63.86662
Akaike information criterion	2.570836
Schwarz criterion	7.380282
Number of coefficients	105

Source: Author computation (2021).

From the VAR result in table 5, the lag of ASI and EQT strongly predict MOT, while other variables (INDL and INTR) do not significantly impact MOT.

4.5.1 Impulse Response Analysis among Variables

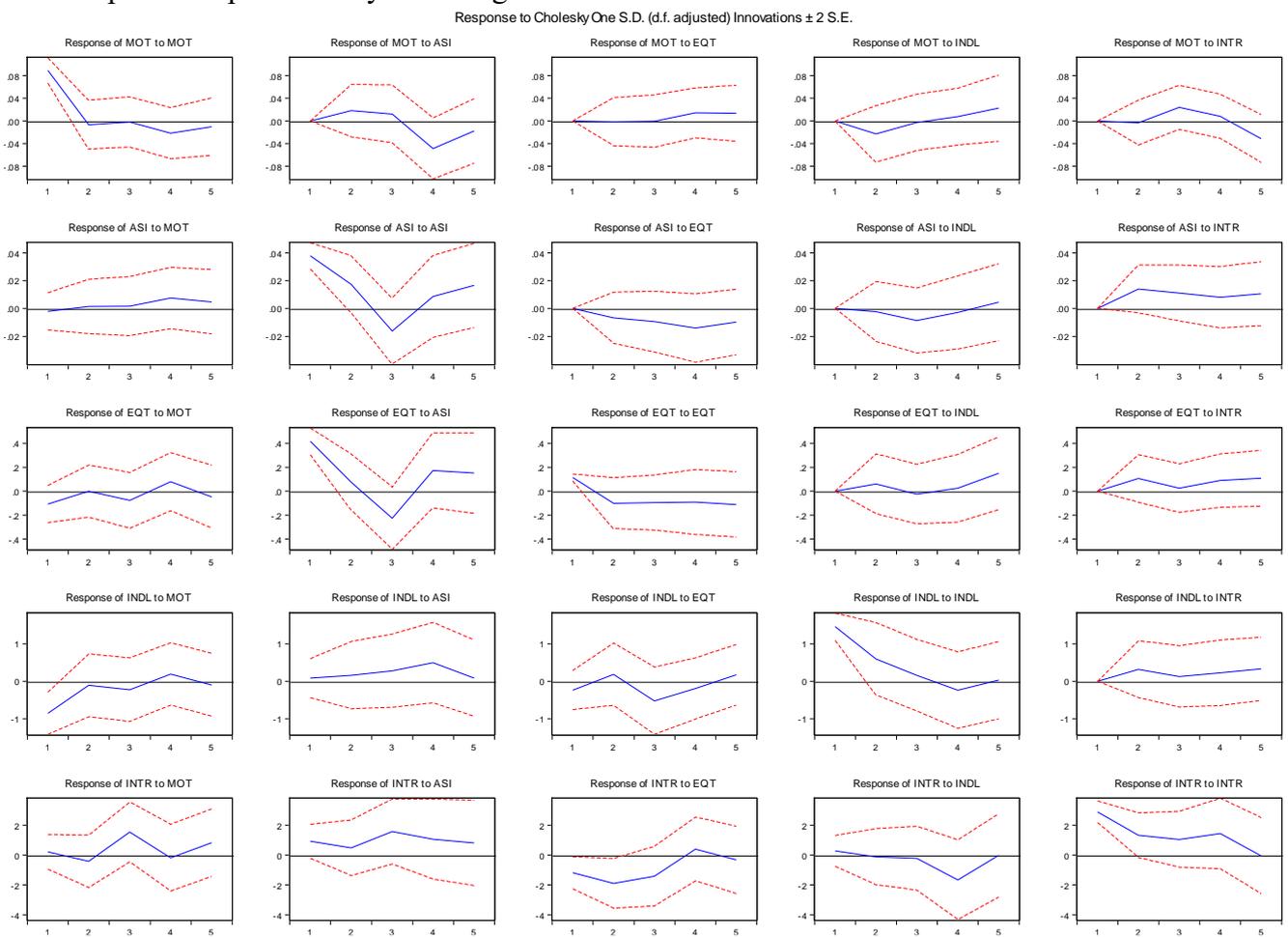


Figure 1. Impulse Response Function Analysis.

From impulse response function analysis result presented in figure 1 shows that the response of manufacturing output to a standard deviation shock (innovation) to other variables has a noticeable weak impact. Also, all other selected variables respond poorly to a standard deviation shock (innovation) to one another.

4.5.2. The Forecast Error Variance Decomposition Analysis

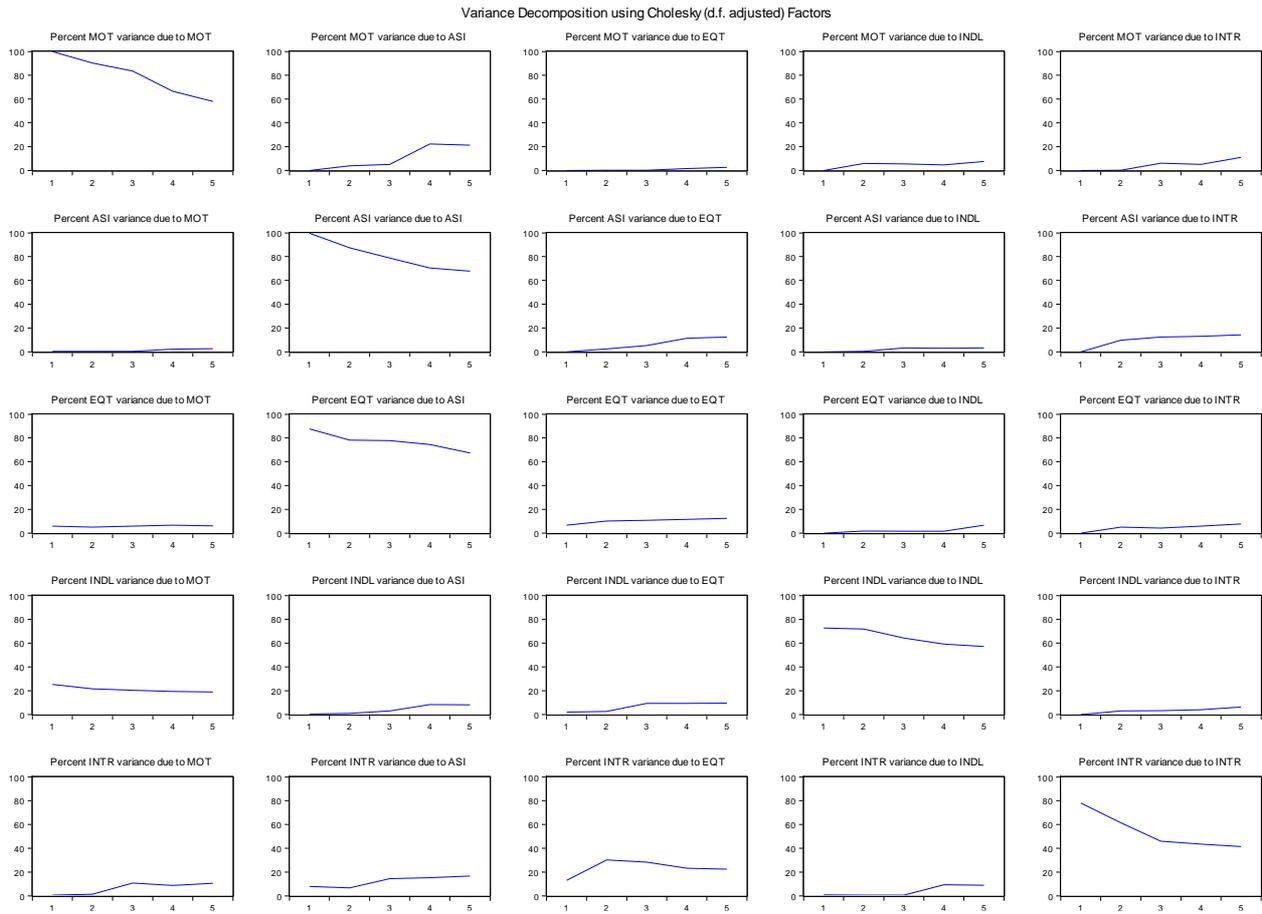


Figure 2. The Forecast Error Variance Decomposition

It is observed from figure 2 that shock (variance) in manufacturing output is mostly caused by the shocks to all share index and feedback shocks from its lag, while the shocks from others are insignificant. Also, the shocks in all share indexes are influenced by interest rate and slightly by Equity while shocks in Equity are caused by the all-share index. In addition, industrial loan shock is only caused by feedback from its own lag. Finally, shock in interest rate is caused by the shock to Equity and feedback from its lag.

4.6 Diagnostic Test

Table 6: VAR Residual Serial Correlation LM Tests

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	34.74021	25	0.0930	1.599001	(25, 8.9)	0.2366
2	15.15824	25	0.9376	0.392963	(25, 8.9)	0.9683
3	42.27898	25	0.0168	2.471991	(25, 8.9)	0.0801
4	44.07579	25	0.0106	2.732072	(25, 8.9)	0.0601

Source: Author computation (2021).

Table 6 result indicates that there is no serial autocorrelation in the series

Table 7. VAR Residual Serial Correlation LM Tests

Component	Skewness	Chi-sq	df	Prob.*

1	-0.371275	0.735173	1	0.3912
2	-0.304803	0.495493	1	0.4815
3	-0.204738	0.223560	1	0.6363
4	0.874137	4.075286	1	0.0435
5	0.274106	0.400715	1	0.5267
<hr/>				
Joint		5.930227	5	0.3131
<hr/>				

Component	Kurtosis	Chi-sq	df	Prob.
1	1.966688	1.423644	1	0.2328
2	3.018880	0.000475	1	0.9826
3	4.109360	1.640907	1	0.2002
4	6.209465	13.73422	1	0.0002
5	3.172770	0.039799	1	0.8419
<hr/>				
Joint		16.83905	5	0.0048
<hr/>				

Component	Jarque-Bera	df	Prob.
1	2.158817	2	0.3398
2	0.495969	2	0.7804
3	1.864467	2	0.3937
4	17.80951	2	0.0001
5	0.440514	2	0.8023
<hr/>			
Joint	22.76928	10	0.0116
<hr/>			

Source: Author computation (2021).

Table & shows that there is no problem of multicollinearity. Therefore, the result obtained can be used for effective prediction.

4.7. Testing for Structural Stability

To test for the stability of the model used in this paper, the cumulative sum of the recursive residuals (CUSUM) and the cumulative sum of squares is applied. The test finds parameters instability if the plots of the cumulative sum of the recursive residuals (CUSUM) and the cumulative sum of squares go outside the area between the two critical lines. The plots are shown in figures 3 and 4 below:

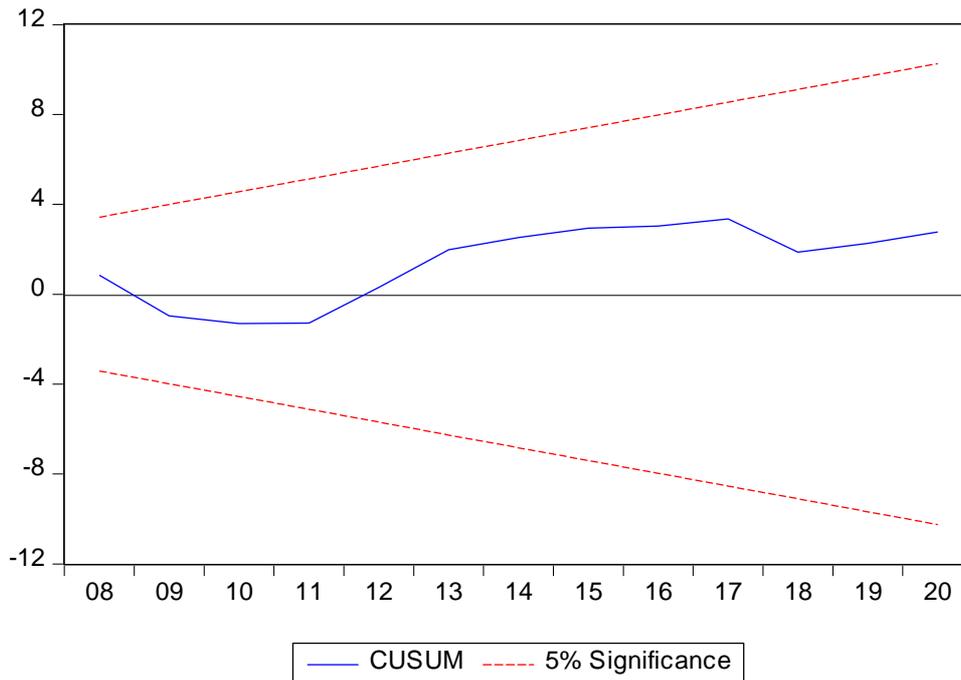


Figure 3. CUSUM Test for Structural Stability of the Parameters

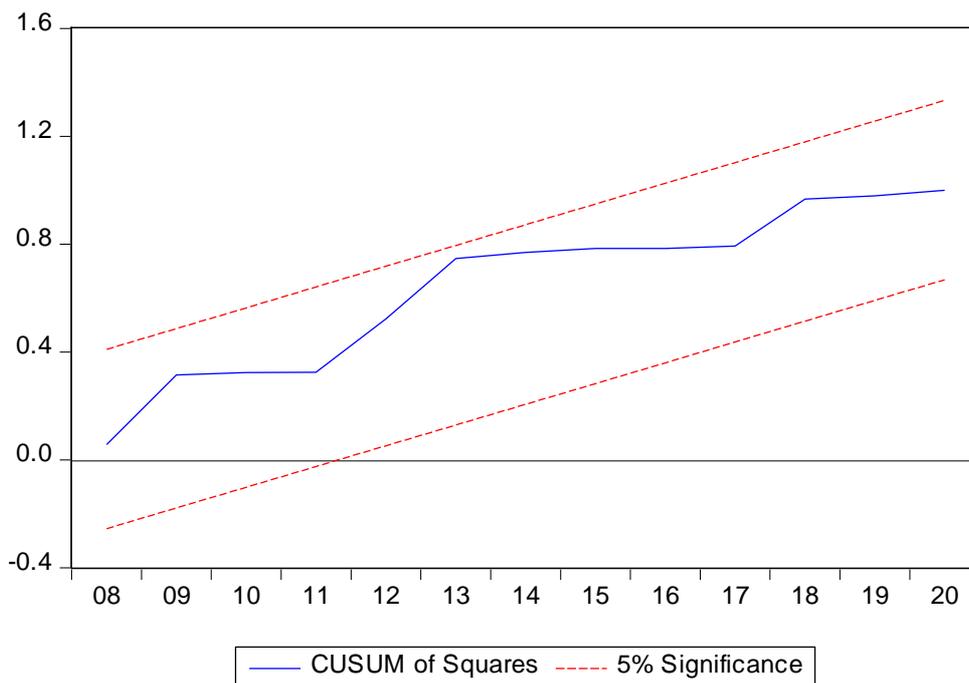


Figure 4. CUSUM of Squares Test for Structural Stability of the Parameters

As shown in fig 3 and fig.4, the results are suggestive of coefficient stability since the plots did not move outside the 5% critical bound. This confirms the existence of coefficient stability for the estimated parameters for the short-run dynamics and long-run of all share index function over the sample periods as the results indicate a tendency of further coefficients stability.

5. CONCLUSION

The study reveals that only all share indexes and equity that have strong predictive power over manufacturing output. Similarly, industrial loans and interest rates do not exhibit a significant impact on manufacturing output. It was observed that both equity and interest rates influence the all-share index. The finding implies that positive change in both all share index and equity will cause sustainable growth in the manufacturing sub-sector. Hence, the government should make concerted efforts in promoting stock market activities in the economy, to bring needed investments required by investors, thereby leading to improve capacity and promotion of manufacturing growth.

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