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The role of institutional risk in Algerian SME development: Empirical study

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Abstract:

The development of the SME sector is becoming a major preoccupation for certain countries, particularly in the developing countries. This article aims to understand the influence of institutional risk on the development of SMEs in Algeria. We have applied the ARDL approach from 1999 to 2021. The results suggest that the institutional environment has a significant influence on the development of SMEs in the country. Improving socio-economic conditions will lead to the development of SMEs in Algeria. Corruption is another factor that significantly impact the growth of SMEs.

Keywords: Institutional risk, SME's, Corruption, Socio-economic condition, ARDL, Algeria

JEL Classification Codes: G2, L2, M1

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Introduction

In the light of growing interdependence of the global economy, nations across the world have invested significant endeavors in enhancing their institutional structures to improve their competitiveness. Several studies highlighted the influence of institutional risk on the SME development. SME's contribute to development, innovation and job creation. Small and medium-sized enterprises (SMEs) are constantly evolving, particularly in an economic environment that offers a suitable business climate. This offers opportunities for profit, job creation, improved productivity and contributes to the growth of the private sector. Institutional risks, can be defines in various ways as how regulations encompassing laws and policies, impact profits (Hoag, 2009). Institutional risk refers to the potential negative impact on an organization's operations investment, or financial performance due to changes or uncertainties in the legal, political or institutional environment of a country or region,(Oliver, 1991).

In this article, institutional risks are defines as the probability of a company's performance suffering adverse consequences due to institutional mechanisms. In Algeria, the SME-SMI sector has developed considerably since 2000. The number of SMEs has risen to 1 300 000 by 2022. The authorities have invested heavily in the sector's growth, setting up a number of support programs. Nevertheless, the number of SME's remains very low compared with the potential that exists in the country, and marginal compared with the number of SME's in developed countries. This article aims to understand the role of the environment risk in the development of the SME sector in Algeria. This research carries significance for advancing theoretical frameworks. There is a scarcity of empirical investigations into institutions risk within

developing nations. This study represents an initial endeavor to comprehend how the institutional setting influences a SME development in Algeria. The study applied a Panel dynamic autoregressive-distributed lag (ARDL) between environment risk and SME's development. The paper is structured as follow: firstly, we will review the literature and previous empirical work, before explaining our model and data set. We will then analyze the applied methodology before discussing the empirical results.

Firstly. Literature review

Researchers have extensively studied the importance of the institutional environment and have considered two perspectives on the effects of institutional risk on small and medium enterprises (SME). It's important to note that the results of the literature review concerning the relationship between the institutional risk and SME development are mixed and ambiguous. Some studies emphasized on the positive impact (*greasing impact)* of weak institutional quality on firms. According to Faccio and al. (2006), firms with political connections experience several advantages compared to non-politically connected firms. They tend to have higher leverage, benefit from lower tax rates, and wield more market power. Moreover, politically connected firms are adept at navigating financial hardships through government bailouts. According to Kaufmann and Wei (1999), firms can take advantage for their companies by establishing close ties with the government; the strong bonds with the government will easily help SME to overcome bureaucratic obstacles.

Additionally, these firms receive preferential treatment through government contracts and favorable loan terms. Méon and Weill (2010)

used the expression “grease the wheels” to express this situation. According to the authors, corruption can grease the wheels of bureaucratic inefficiency especially in autocratic regimes. Bologna and Ross (2015) studied the impact of corruption on entrepreneurial activity in Brazil; they argue that corruption enables entrepreneurs to circumvent regulatory, legal and tax obstacles, nevertheless, the potential positive impact of corruption quickly dissipate. Corruption only has positive effects in the context of institutions of extremely low quality. In their research Chaney et al. (2011) highlighted that politically connected firms enjoy lower costs of debt. These firms tend to exhibit lower earnings quality, which suggests that the level of managerial risk aversion may differ between politically connected firms and their unconnected counterparts.

The weak institutional environment, particularly in developing countries, is characterized by the proliferation of corruption, the absence of formal market support and regulation institutions, and by an inefficient regulatory and legal system. In this context, entrepreneurs wishing to set up a business or to ensure the sustainability of their activity take steps to manage the uncertainty and increased institutional risk they may face. Corruption could give business owners preferential treatment, such as direct contracts, loan approvals from banks, and regulation favors (Dheer, 2017; Wellalage and al., 2019).

Another series of studies show a sanding impact (negative) of institutional risk on SME’s development. These studies confirm that a weak institutional environment can decrease firm value (Amore and Bennedsen, 2013), and reduce SME’s innovation and investments. Borisov et al., (2015) document that a high level of corruption leads to

financial fragility of SME's. According to Chen and al., (2018) ; Kong and al., (2017) ; Cao and al., (2019), SMEs located in countries where corruption is high tend to carry out value-destroying projects, which is largely detrimental to their long-term performance. Lea and al., (2021), studied the relationship between institutional risks and SME in two different national environments, emerging Southeast Asian countries and United State of America. They find that an environment with strong and transparent institutions reduces risks for SME in emerging Southeast Asian countries; in contrast, there is no evidence of the existence of a relationship between institutional development and American SME risks.

Secondly. Data and methodology

Current study explores the long-run and short-run cointégration and causality connection between institutional risk and SME development in Algerian economy. We used an annual time series from World Bank covering from 1999 to 2021. We introduced two control variables: Foreign Direct Investment (FDI), and Consumer Price Index (CPI). To measure institutional risk we used International Country Risk Guide (ICRG) ratings from PRS Group. We have chosen two variables that we believe perfectly capture the state of institutions in Algeria: Socio-economic conditions and Corruption indicator.

The equation to estimate is:

$$SME_t = \alpha_{0+} \alpha_1 SME_{t-1} + \alpha_2 SEC_t + \alpha_3 COR_t + \alpha_n \Sigma X_t + \varepsilon_t \quad \text{.....(1)}$$

$$LnSME_t = \alpha_{0+} \alpha_1 \text{Ln}SME_{t-1} + \alpha_2 LnSEC_t + \alpha_3 LnCOR_t + \alpha_4 LnFDI_t \alpha_3 LnCPI_t + \varepsilon_t \quad \text{.....(2)}$$

Where:

SME_t: Number of Small Medium Enterprises;

SEC_t: Socio-economic conditions

COR_t: Corruption indicator

X_t: Control variables;

ε_{it} : Error term that represents other factors not capture in the model;

LnSME, LnSEC, LnCOR, LnFDI, LnCPI: The logarithmic rate of the series.

The variables understudy is shown in the Table 1. The maximum number of SMEs is 1286365 in the year 2021 and the minimum number is 210332 in 2000. This indicates a positive trend in the number of SMEs over the study period. Algeria has made considerable efforts to support the development of SMEs. The authorities have invested heavily through several growth plans.

Table 1: Descriptive statistics

	SME	SEC	COR	FDI	CPI
Mean	657221.1	4.913043	1.820652	1.17E+08	107.3168
Median	618515.0	5.000000	2.000000	46540882	100.0000
Maximum	1286365.	6.000000	2.000000	8.46E+08	166.2189
Minimum	210332.0	3.000000	1.500000	2.72E+08	70.20004
Std. Dev.	363216.7	0.820153	0.240158	2.21E+08	30.68030
Skewness	0.370914	-1.116789	-0.621613	1.715186	0.447405
Kurtosis	1.750796	3.270176	1.406636	6.779561	1.857382
Jarque-Bera	2.022868	4.850955	3.914234	24.96701	2.018499
Probability	0.363697	0.088436	0.141265	0.000004	0.364492
Sum	15116086	113.0000	41.87500	2.69E+09	2468.287
Sum Sq. Dev.	2.90E+12	14.79831	1.268871	1.07E+18	20708.17
Observations	23	23	23	23	23

The small and medium-sized enterprise sector is one of the main engines of economic development that the public authorities are working to achieve, because of its many strengths and qualifications, in particular its ability to contribute to economic diversification, wealth creation, job creation, limiting imports and promoting exports. Socio-economic condition indicator refer to an evaluation of the economic socio factors operating within a society, which may either limit government initiatives or contribute to public discontentment. In Algeria this indicator is weak which confirm the deterioration of socio-economic conditions especially the latest years. The minimum value corresponds to 3 in 2000; the maximum value is 6 in 2007, in 2021, the variable corresponds to 5. Concerning the corruption indicator, Algeria achieved a score of 2 out of 6 in 2021, indicating a very high level of risk of corruption. This indicator highlights the existence of a very high institutional risk in the country, and the great fragility of the institutional environment.

Thirdly. Unite root test

To check the stationnarity of the data, we used unit root tests such as the Augmented Dickey-Fuller (ADF) and Philips Perron (PP).The outcomes clearly demonstrate that the order of integration of *SME* is first difference; For the variables: *COR, FDI, CPI, they are all stationary at* first difference. Only SEC variable is stationary at level. These results allowed us to perform the cointegration test to check whether there is a cointegration equation among the variables or not.

Table 2: Unite root test

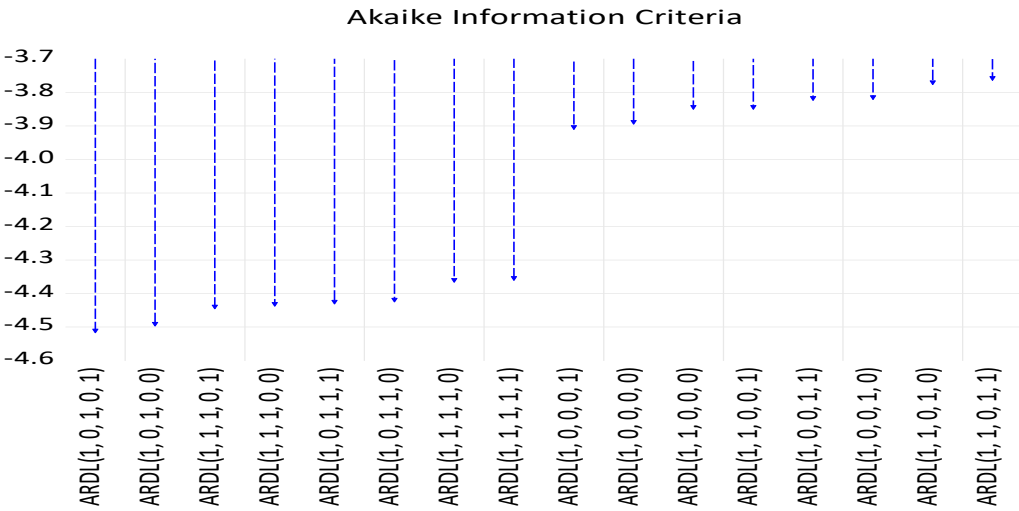
Variables	ADF		Phillips-Perron	
	Level	First difference	Level	First difference
LnSME	-0.954991	-5.561720	-1.151781	-5.616784
	(0.7504)	(0.0002)***	(0.6758)	(0.0002)***
LnSEC	-4.363023	-3.110970	-2.842623	-3.176897
	(0.0029)**	(0.0411)**	(0.0687)	(0.0360)**
LnCOR	-1.330749	3.862749	-1.438229	-3.862749
	(0.5964)	(0.0085)**	(0.5450)	(0.0085)**
LnFDI	-2.863402	-5.313738	-20855942	-5604187
	(0.0660)	(0.0003)***	(0.0669)	(0.0002)***
LnCPI	1.587359	-3.088315	1.841277	-4.050896
	(0.9990)	(0.0438)**	(0.9995)	(0.0056)**

***, **, and * denote 1%, 5%, and 10% significance level, Probability value between ( ).

Fourthly. Results and discussions

Before discussing the results it is important to determine the order lag selection criteria. We selected optimal lag according to Akaike information criteria for the ARDL. According to the results of the Akaike information criterion, the ARDL (1, 0 1, 0, 1) is the accepted model.

Figure 1: Akaike information criteria



According to the table 3, the optimal lag order selection criteria is: Lag1.

Table 3: Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	147.9895	NA	1.56e-12	-12.99904	-12.75108	-12.94063
1	256.0533	157.1838*	8.78e-16*	-20.55030*	-19.06252*	-20.19982*

The table 4 indicates the cointegration of variables using the Fisher statistic developed by Pesaran et al. (2001). The aim is to see whether there are any long-term relationships between the variables. We compare the Fisher statistic with the tabulated critical values (bounds) (Pesaran et al., 2001). If the Fisher statistic is greater than the upper bound, we reject the null hypothesis that there is no cointegration between the variables. The results of the cointegration tests are given in the table below:

Table 4: ARDL bounds test

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	4.879917	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

The results of ARDL bounds test confirm the existence of a cointegrating relationship between institutional risk and SME development, since the value of F-statistic = 4.87 greater than that of the upper bound whatever the critical threshold (10%, 5%, 2.5% or 1%). The existence of a cointegrating relationship allows us to estimate the long-term effects between the variables

Table 5: ARDL long-run results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LnCOR	0.517602	0.176180	2.937919	0.0108**
LnSEC	0.642155	0.138092	4.650189	0.0004***
LnFDI	0.084066	0.045321	1.854871	0.0848*
LnCPI	1.597564	0.126094	12.66966	0.0000***
C	1.957433	0.166215	11.77649	0.0000***

***, **, and * denote 1%, 5%, and 10% significance level

The empirical results highlighted in table 5, indicated the ARDL long-run between institutional risk and SME development in Algeria. The results suggest that the variables of interest are highly significant and influence SME development in the country. According to the table, one percent increase of social-economic condition leads to 0.51 increases in number of SME at one percent significance level. This result confirms the important of socio-economic conditions in developing SME in the country. The deterioration of institutional environment will lead to the collapse of the SME fabric, additionally, in times of economic turmoil, unemployment, inflation, high taxes, low consumer confidence and poverty, SMEs will find it more difficult to ensure their survival. The deterioration of social and economic conditions in Algeria seems to severely impact the SME development. Corruption indicator seems to influence the SME development at 1 % threshold. Corruption, as expected, influences the activities of SMEs and their development, but it is interesting to note that the relationship is rather positive, which means that an increase in corruption increases the number of SMEs in Algeria. It is important to stress that corruption in Algeria is pandemic, and that the private sector is a closed sector, in the sense that several strategic sectors are monopolized by public companies. Private companies generally have to comply with corrupt practices in order, for example, to gain access to markets, bypass unfair competition, and gain access to bank financing, win contracts, especially with the public sector, and overcome bureaucratic obstacles. The “grease the wheels” theory seems to be confirmed in the case of Algerian economy. FDI variable is not significant, this result was expected, indeed, Algeria has experienced a drop of FDI in five recent years. CPI variable is significant at one

percent threshold, and highly influence the SME development in the country.

Tableau 6: ARDL short-run results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LnSEC)	-0.289119	0.131665	-2.195870	0.0455**
D(LnCPI)	2.159240	0.222660	9.697475	0.0000***
CointEq (-1)*	-0.830640	0.131771	-6.303687	0.0000***
R-squared	0.655230	Mean dependent var		0.035748
Adjusted R-squared	0.618939	S.D. dependent var		0.030736
S.E. of regression	0.018973	Akaike info criterion		-4.965465
Sum squared resid	0.006840	Schwarz criterion		-4.816687
Log likelihood	57.62012	Hannan-Quinn criter.		-4.930418
Durbin-Watson stat	2.343737			

***, **, and * denote 1%, 5%, and 10% significance level

Table 6 indicates the short-run estimation. The error correction part (ecm), which represents the speed of adjustment from the short run to the long run, is significant at 1 percent and negatively signed. The long run result implies a direct connection between SME development and institutional risk while the short run result suggests that there could be indirect connection between the two variables, but they will always adjust back to equilibrium from the long run result. The results suggest that socio-economic conditions is significant at short run time, but negatively correlated to SME development, that means that the efforts made by Algeria to improve its institutional environment is not sufficient to create a comfortable conditions for SME fulfillment. Algeria is seen as a country where the environment is not conducive enough to doing business.

Fifthly .Diagnostic tests

The model of our study is validated by several diagnostic tests, The results show that the p-value of Jarque-Bera statistic for normality test is > 0.05, heteroscedasticity error (p-value > 0.05), the serial correlation, (pvalue > 0.05) as shown in the table 7. Figures 2 and 3, indicates the CUSUM and CUSUMSQ plots, are within the 95% confidence interval showing a stability of the model under estimation.

Table 7: Diagnostic tests

Diagnostic tests	Coefficient	P value
Normality (J.B)	0.171915	0.9176
Breusch–Pagan–Godfrey	1.517836	0.2395
Breusch-Godfrey Serial Correlation LM Test	0.643810	0.5425
CUSUM	Stable	
CUSUM of square	Stable	

Figure 2: CUSUM of squares plot

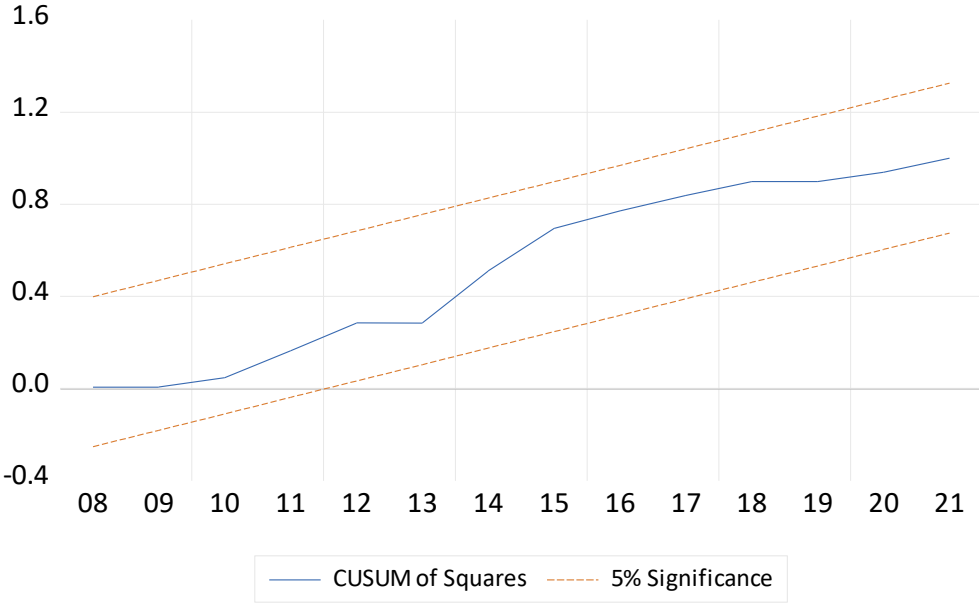
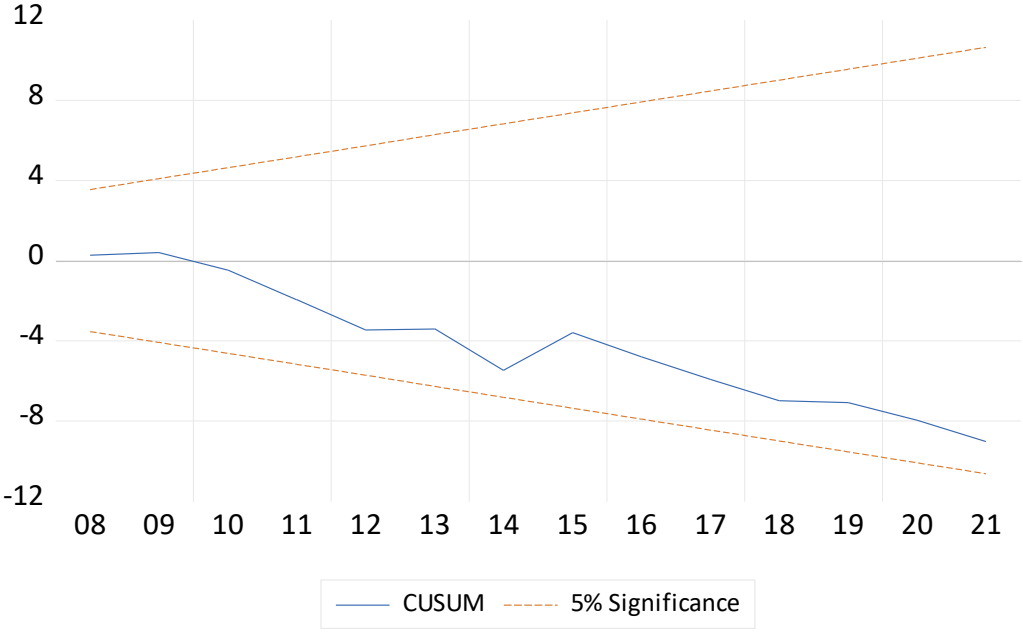


Figure3: CUSUM plot



Conclusion

Designing effective policies to address the institutional risks faced by small and medium-sized enterprises (SMEs) poses a significant global challenge for policymakers. This article aims to understand the importance and influence of institutional risk on the development of SMEs in Algeria. We applied the ARDL approach for the period 1999 to 2021. The results clearly suggest that the institutional environment has a significant influence on the development of SMEs in the country. Improving socio-economic conditions will lead to the development of SMEs in Algeria. Corruption is another factor that significantly explains the growth of SMEs. The results show that there is a positive relationship between corruption and SMEs. This result was expected, given the proliferation of corrupt practices in the country. The concept of "grease the wheels" theory appears to find validation when applied to the Algerian economy. According to Méon (2009), it is a common observation that in countries with weaker overall institutional frameworks, corruption tends to have a lesser negative impact. In order to develop the SME sector in Algeria, it is now essential to take a series of measures to improve the institutional environment that is hampering the development and growth of Algerian enterprise, such as: improving government effectiveness, and the quality of regularity systems, fighting corruption by improving transparency within institutions.

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