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# Examining the Impact of Corruption on Financial Sector Development (FSD) in Arab League Countries (ALC)

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## Abstract

Arab League countries (ALC) have witnessed major regulatory and financial reforms during the last two decades. During this period, these countries have been marred also by corruption. Keeping in view the above context, the current study explored the impact of corruption on Financial Sector Development (FSD) in ALC during the period 2001-2020. By using the dynamic panel data estimation technique of the Generalized Method of Moments (GMM) on a sample of 20 ALC. The findings showed that there was a significant negative effect of corruption on FSD. These results favored the notion of “sand the wheels” hypothesis. The findings also highlighted the insensitivity of financial development to corruption during the Global Financial Crisis (GFC) (2008). Moreover, the results also indicated that there was an adverse effect of corruption on financial development after Arab Spring. The study acknowledged the moderating role of ‘rule of law’ in the relationship between corruption and financial development.

**Keywords:** Arab League Countries (ALC), Arab Spring, financial sector development, corruption, global financial crisis (GFC)

**JEL Classification:** C23, D 73, G 01

## Introduction

Financial development is defined as the “process of marks improvement in quantity and efficiency of financial intermediaries” (Chaiechi, [2012](#)). Financial Sector Development (FSD) is one of the key factors in economic development: moreover, well-functioning financial institutions are also imperative for economic development (Slozko & Pelo, [2014](#)). A country cannot grow to its full potential without a financial sector. Therefore, advance economic states have effective and well-harmonized financial and

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economic systems as compared to under-developed countries. The savings and investment rate would not only rise by virtue of this healthier financial system, however, it would also be the catalyst of better economic growth on a long-term basis (Gurgul & Lach, [2012](#)).

Corruption is one of the vital constraints in the financial system. According to the report of the World Bank ([2011](#)), corruption is a big threat to social and economic development. It refers to the misuse of government offices for private gains. The main hurdle in FSD is the misuse of funds. Corruption weakens the institutional foundations and rule of law upon which a country leads. Lambsdorff ([2002](#)) described corruption as another category of rent-seeking. According to the report of World Bank 2002, the funds of developing and underdeveloped countries are wasted every year due to corruption (Vial & Hanoteau, [2010](#)). Corruption can be avoided if laws are strictly followed according to rules and regulations (Ahlin & Pang, [2008](#)).

The current study found its roots in the “law and finance theory” presented by Porta et al. ([1997](#)). This theory underpins the role of law in the evolution of financial development. It focuses on the legal system and the origin of these systems. It stresses that legal tradition differs in terms of importance and historically defined legal tradition shapes today’s financial development. The “law and finance theory” states that countries having common laws are more developed than those who have civil laws (Mohammad et al., [2019](#)).

Iqbal ([2004](#)) inferred that governments have played an active role in the growth of the bank-based financial sector of the Arab world. According to the Arab Developmental Portal website, the Arab banking sector stood at 3.4 trillion and its total deposits were 2.1 trillion US dollars until the half-year of 2018. Moreover, the Arab world has seen a significant change in financial development by virtue of various regulatory reforms in the previous twenty years or so (Jouini, [2013](#)). Corruption in the Arab world is rampant according to the Corruption Perception Index (CPI) 2018 and the majority of Arab world countries ranked lowest in this index. The situation becomes surprising as these countries derive their legal system from Islamic principles, whereas corruption is forbidden (Haram) in Islam (Haykal, [2017](#)). In this context, there is a need to examine the effect of corruption on FSD in the Arab world.

The current study measured the impact of corruption on FSD in the organization of Arab League countries (ALC). According to the report of the World Bank, ALC includes 22 countries and the majority of those countries are either developing or are underdeveloped. This study attempted to fill the gaps in the literature by providing empirical evidence concerning ALC. The second contribution of the study is that it explained the impact of corruption on FSD in ALC during the Global Financial Crisis (GFC) of 2008. Thirdly, it elaborated the impact of corruption on FSD in the aftermath of Arab Spring (AS). Last but not least, this study measured the moderating role of rule of law on the impact of corruption on FSD in ALC.

### Literature Review

Prior literature presented the mixed effect of corruption on FSD. One camp supported the positive impact of corruption on FSD. This school of thought favors the “grease the wheel hypothesis” and argues that corruption reduces the failure of institutions in developing countries (Arif et al., [2020](#)). They advocate that corruption speeds up the economic activity during inefficient governing systems and structures (Meon & Sekkat, [2005](#)).

The other camp supported the negative impact of corruption on FSD and favored the “sand the wheel hypothesis”. They advocated that corruption is costly for economic development. The countries which tend to have weak institutions, private banks do not exert a significant impact in FSD as they are “crowded out” by public banks. In such situations, government can influence the distribution of funds for its own interest. Accordingly, corruption increases the interest rate spread by moving productive resources away which, in turn, reduces the efficiency of the financial sector. Thus, corruption acts as sand in the development process (Cooray & Schneider, [2018](#)).

Empirical literature supports both of these converging hypotheses. For instance, Mauro ([1995](#)) examined the influence of corruption on economic growth and concluded that corruption lowers growth via investment. The author determined these findings by investigating cross-country data from 1960 to 1985. Thus, the author favored the notion of the “sand the wheels” hypothesis. Similarly, Kaufmann and Wei ([1999](#)) analyzed the international firm-level data. They did not find any evidence of the positive impact of corruption and hence, their findings also supported “sand the wheels” hypothesis. Meon and Sekkat ([2005](#)) examined the impact of

corruption on economic growth, investment, and governance quality. They were of the view that the effect of corruption on economic growth and investment was non-simultaneous. They supported the sand the wheels' hypothesis in their sample of developed and under developing countries covering a period from 1970 to 1998. They concluded that corruption doesn't allow the collection of capital and negatively affects the growth. Mendez and Sepulveda (2006) examined the influence of corruption on long term economic growth during 1960 to 2000. They observed a positive effect of corruption in free countries. They established that corruption grows easily where economic freedom is high and where no rules and regulations are followed. Vial and Hanoteau (2010) investigated the effect of corruption on the productivity growth of the Indonesian manufacturing sector from 1975 to 1995. They reported a positive influence of individual plant-level corruption on productivity and growth. They concluded that by paying bribes, plant managers overcame the hurdles of red tape and other obstacles resulting in high productivity and growth.

Dreher and Gassebner (2013) analyzed the "greasing effect" of corruption in reducing the negative effect of regulations on entrepreneurial activity in 43 countries during 2003 to 2005. They reported that corruption facilitated the firm entrance in regulated countries by playing its positive effect. Kato and Institu (2015) investigated the impact of corruption in both regulated and unregulated manufacturing concerns of 17 Indian major states. They were of the view that corruption had a positive effect on deteriorated bureaucracy. They opined that bribery acts as a lubricant to encourage investment in highly regulated states. Shittu, Hassan, and Nawaz (2018) examined the effect of corruption on economic growth of African countries from 1990-2015. They were of the view that in these countries corruption increased the growth, although with some considerations. Arif et al. (2020) examined the influence of corruption on Foreign Direct Investment (FDI) of BRICS countries during 1995-2015. Their estimation indicated that the decrease in corruption had a cumulative positive effect on FDI, however, this effect varied in individual countries. They concluded that countries must adopt strict measures to combat corruption in order to encourage FDI. Son et al. (2020) concluded that corruption had a negative impact on the soundness of the banking sector as non-performing loans increased with an increase in corruption in their sample of 120 countries from 2004-2017. These results supported the "sand the wheels" hypothesis as increased corruption reduces the risk tolerance towards loans and

increases the rate of non-performing loans. Hence, asset quality and banks' stability deteriorate.

Alsagr and Hemmen (2021) supported the negative impact of corruption on financial development of BRICS countries from 1991-2018. They were of the view that an increase in corruption reduces the investors' confidence which, in turn, exhibit detrimental effect on financial development. Song et al. (2021) examined the association of corruption and financial development in 142 countries during the period from 2002-2016. They reported diverse heterogeneous findings for developed and under developing countries. Baklouti and Boujelbene (2021) examined the influence of corruption on public debt considering role of democracy. They applied GMM model to analyze the data taken from 16 Arab countries for the period 2000-2016. Their results indicated that corruption is positively related with public debt provided that level of democracy is low. Yao et al. (2021) examined the relationship among energy saving, financial development, and corruption. They used data for the period of 1995-2014 from BRICS countries. By applying GMM model they found that corruption and energy efficiency have a positive relationship.

Although, there is a considerable amount of literature on the effect of corruption on growth, however, these empirical studies produced heterogeneous findings. This inconclusive evidence coupled with nascent literature, focusing on corruption's effect on financial development, demands further examination of the effect of corruption on financial development and makes it an important topic for research.

## Hypotheses

Following hypotheses would be tested in the current study:

H1: There is a negative impact of corruption on financial development in ALC.

H2: There is a negative impact of corruption on financial development during GFC.

H3: There is a negative impact of corruption on financial development in ALC after AS.

H4: There is a moderating effect of rule of law on the impact of corruption on financial development in ALC.

## Methodology

The current study used the Generalized Method of Moments (GMM) approach in line with work of Eksi and Dogan (2020). Along with the treatment of endogeneity, GMM also accommodates individual time-invariant fixed effects, unobserved heterogeneity, and autocorrelation in the panel. Moreover, it accommodates measurement error problem and it also reduces omitted bias issues. Two-step GMM is used due to its effectiveness in generating higher estimator values than one step. Gujarati (2009) narrated that estimation of GMM is only valid if the number of units (countries) is greater than the instruments being used. The collapse option is used to overcome the problem of too many instruments. Hansen tests of over-identifying restrictions are employed to check the validity of the instruments.

## Data

There are 22 countries in Arab League. The data of two countries (Somalia and Syria) was not available so the final sample consisted of 20 countries. The time period of this study was from 2001-2020. The data of macroeconomic variables was gathered from the World Bank website and data of corruption was obtained from International Country Risk Guide (ICRG) website.

## Model

The general model of this study is as follows.

$$\text{Financial development}_{it} = \beta_0 + \beta_1 \text{Lag. Financial development}_{it} + \beta_2 \text{ICRG Index}_{it} + \beta_3 \text{Control Variables}_{it} + U_{it}$$

The specific equation used in this study is,

$$\text{DCPGDP}_{it} = \beta_0 + \beta_1 \text{DCPGDP}_{it} + \beta_2 \text{ICRG}_{it} + \beta_3 \text{GDPCCG}_{it} + \beta_4 \text{GEX}_{it} + \beta_5 \text{RR}_{it} + \beta_5 \text{RL}_{it} + U_{it}$$

where

DCPGDP = Domestic Credit to the Private Sector to GDP Ratio

ICRG = International Country Risk Guide

GDPCCG = GDP per Capita Growth

GEX = Government Expenditure

RR	=	Natural Resource Rent
RL	=	quality of Rule of Law

The dependent variable in this study was FSD. The study used the domestic credit to the private sector to GDP ratio as a proxy of financial development by following Cooray and Schneider (2018). It described the financial resources provided by the financial corporations to the private sector.

Variable of corruption was captured by ICRG corruption index. The ICRG index provides corruption ratings of countries based on various surveys. This index has a value from 0 to 6 with a high value of this index indicating better control of corruption. A country that has a value of 0 is considered as totally corrupt, while 6 is an indication that the country is not corrupt. Alsagr and Hemmen (2021) used this measure in their research.

The current study used some control variables as well. The first control variable is GDPCCG, that is, GDP per capita growth following the work of Alsagr and Hemmen (2021). GEX, that is, government expenditure is computed as the ratio of final consumption expenditure (% of GDP). Eksi and Dogan (2020) are of the view that this measure tells the size of government and is used by following them. Natural resource rent (RR) is the ratio of total resource rent to GDP. The total resource is the summation of all fuel and nonfuel natural resources' rents. It is used following Khan, Khan, and Ali (2020). Rule of Law (RL) indicates the quality of rule of law on a scale of -2.5 to 2.5. A high score is a sign of a superior condition of rule of law in society. This measure is in line with the work of Khan, Khan, and Zuojun (2020).

## Results

### Descriptive Statistics

Descriptive statistics for all the ALC of this study are presented in Table 1. Here in this study, the average value of DCPGDP is 42.435%. While, the minimum and maximum value of this measure of financial development stands at 2.965% and 106.34 %, respectively. The average value of ICRG is 2.165 and its value varies from 0.5(low) to 4 (high) approximately. Table 1 also shows that the sample has a 1.110% average GDPCCG ratio. While, this ratio fluctuates from a lowest of -62.378% to a highest of 121.78%. The average value of GEX stands at 16.285%, while it's high and low values fluctuate from 5.90% to 30% approximately. The average RR of ALC



stands at 17.882% with its minimum and maximum value ranging from 0% to 67.917%. RL has a mean value of -0.33 and its maximum and minimum values are stated in the table 1 given below.

**Table 1**  
*Descriptive Statistics of ALC*

	DCPGDP%	ICRG	GDPCCG%	GEX%	RR%	RL
Mean	42.435	2.165	1.110	16.285	17.882	-0.334
S.D	20.058	0.742	8.723	5.246	17.080	0.667
Min	2.965	0.5	-62.378	5.902	0	-1.816
Max	106.34	4	121.78	30	67.917	0.958

### Multi-Collinearity Testing

Correlations between various variables used in the current study are shown in Table 2. Gujarati (2009) is of the view that coefficient's value above 0.8 would be a problem. Since all values are below this, therefore there is no multi-collinearity issue. Moreover, variance inflation factor (VIF) is also used to check multi-collinearity. A value higher than 10 for independent variables indicates multi-collinearity. As no value in Table 2 is above 10, so there is no multi-collinearity issue.

**Table 2**  
*Correlation Analysis of ALC*

	ICRG	GDPCCG	GEX	RR	RL
ICRG	1.000				
GDPCCG	-0.128	1.000			
GEX	0.223	-0.089	1.000		
RR	0.008	0.006	-0.017	1.000	
RL	0.748	-0.206	0.361	0.045	1.000

According to Gujarati (2009), the VIF value should not be greater than 10 otherwise it would be a serious problem. As shown in table 3, all the values of VIF are less than 3 which means that there is no multi-collinearity issue.

**Table 3**  
*Variance Inflation Factor of ALC*

Variable	VIF
ICRG	2.29
GDPCCG	1.05
GEX	1.08
RR	1.00
RL	2.40

*Note.* Mean = 1.56

### Impact of Corruption on Financial Sector Development (FSD)

Table 4 explains the determinants of financial development in ALC countries. This Table reports that corruption has a negative effect on FSD as the coefficient of corruption ICRG is negative and highly significant. This result accepts the H1 hypothesis. These findings support the “sand the wheels” phenomenon. The effect of GDP per capita growth is also adverse on financial development by virtue of a significant inverse coefficient. This indicates that growth in economy is negatively affecting development in the financial sector. The variable GEX is positively affecting the dependent variable highlighting that government expenditure positively affects the financial development in this study. Resource rent does not affect corruption in this study. Though, the sign of its coefficient is negative, however, it is insignificant. Rule of law negatively affects financial development as it has a negative and statistically significant coefficient.

**Table 4**  
*Factors Affecting Financial Development in ALC*

Variable	Coefficient	Standard Error	<i>p</i> value
L.DV	0.608***	0.148	0.000
ICRG	-80.507	34.520	0.020
GDPCCG	-0.373	0.192	0.052
GEX	0.932	0.315	0.003
RR	-1.366	1.721	0.427
RL	-109.791	43.460	0.012
Chi Sq.	500.36		0.000
No. of groups	14		
No. of instruments	13		
Hansen test ( <i>p</i> -value)	0.764		
AR (2) test ( <i>p</i> -value)	0.328		

## Impact of Corruption on Financial Sector Development (FSD) during GFC

The world witnessed an international financial crisis, that is, GFC of 2008. This GFC exposed the weaknesses of the financial system of developed countries, such as the USA and the UK. ALC being underdeveloped is no exception to this. The study attempted to explore the effect of corruption on the financial development of ALC during GFC. Table 5 reports the impact of factors affecting financial development during GFC. As can be seen from the values of Table 5 that ICRG has no effect on financial development during GFC, though its value is positive, however, statistically insignificant rejecting H2. So, it can be inferred that the influence of corruption on FSD is insensitive to GFC. The same conclusion can be drawn with respect to the effect of GDP per capita growth. As far as the effect of variables of government expenditure, resource rent, and rule of law is concerned, all have a positive effect on financial development. The statistically significant positive coefficients in all three variables confirm that FSD is positively affected by these variables.

**Table 5**

*Factors affecting Financial Development in ALC during GFC*

Variable	Coefficient	Standard Error	<i>p</i> value
L.DV	0.545	0.393	0.166
ICRG	22.027	46.795	0.638
GDPCCG	-0.014	0.124	0.905
GEX	0.317	0.044	0.000
RR	4.278	1.384	0.002
RL	165.613	40.529	0.000
Chi Sq	5442.32		0.000
No. of groups	14		
No. of instruments	13		
Hansen test (p-value)	0.338		
AR (2) test (p-value)	0.524		

## Impact of Corruption on Financial Sector Development (FSD) during Arab Spring

The Arab world witnessed a ferocious and violent movement called Arab Spring (AS) in December 2010. This movement gave rise to political instability and unrest in the region. Arayssi et al. (2019) are of the view that political turmoil and instability are harmful to FSD and economic growth. Therefore, this study also examined the influence of corruption on financial development in the aftermath of AS. It can be seen from Table 6 that the effect of corruption on financial development is negative after the occurrence of AS accepting H3. However, resource rent has negative and rule of law has a positive impact on the development of the financial sector after AS.

**Table 6**

*Factors affecting FD in ALC after AS*

Variable	Coefficient	Standard Error	<i>p</i> value
L.DV	0.114	0.313	0.714
ICRG	-178.359	101.665	0.079
GDPCCG	1.018	0.284	0.000
GEX	-0.375	0.622	0.546
RR	-12.268	2.922	0.000
RL	311.029	175.003	0.076
Chi Sq	86.95		0.000
No. of groups	14		
No. of instruments	12		
Hansen test ( <i>p</i> -value)	0.451		
AR (2) test ( <i>p</i> -value)	0.625		

## Moderating Effect of Rule of Law on Financial Sector Development (FSD)

Moderation effect of rule of law on the relationship between bank financial development and corruption is presented in a more comprehensive analysis in Table 7. The current study used rule of law by interacting it with corruption in line with the methodology of Keppel and Zedeck (1989). There is a significant positive effect of interaction between corruption and rule of law on financial development. This significant positive effect is an indication of the moderation role played by rule of law, thus accepting H4.

In other words, rule of law moderates the relationship between corruption and financial development.

**Table 7**

*Moderation of Rule of Law on FD*

Variable	Coefficient	Standard Error	<i>p</i> value
L.DV	0.581	0.080	0.000
ICRG	0.482	49.104	0.992
GDPCCG	0.271	0.109	0.013
GEX	-0.023	0.180	0.894
RR	-1.829	2.054	0.373
RL	-220.860	129.967	0.089
MODRL	143.581	66.396	0.031
Chi Sq	455.69		0.000
No. of groups	14		
No. of instruments	13		
Hansen test (p-value)	.217		
AR (2) test (p-value)	.153		

## Discussion

The main purpose of the current research was to analyze the impact of corruption on FSD in ALC from 2001-2020. In doing so, the study tested two contradicting hypotheses between corruption and FSD. The study reported that corruption reduces financial development as it has a negative impact on it. In doing so the study accepted the H1 and confirmed the “sand the wheels” hypothesis which also advocated a negative impact. These findings support the findings of a long array of literature in this area, that is, Alsagr and Hemmen (2021). One reason for this negative impact can be the redirection of funds from effective to ineffective operations by the elite class of society. This retraction of capital compromises the welfare of the general public leaving the common man bare-handed. Moreover, governance might have played a role in this adverse effect as the governance situation in all these countries is not so good (Sayılır et al., 2018). The negative effect of GDP per capita growth on financial development can be attributed to the phenomenon of creative destruction coined by Schumpeter (1942). This negative effect is in line with the study of Eksi and Dogan (2020). The results of this study pointed towards the positive effect of government expenditure on financial development. The theory is divided on the basis of the impact of government expenditure on financial development. On the one

hand, it advocates the negative effect as huge public spending tightens the resources of the financial system. While, the other side of the story argues that an increase in productive expenditure increases the situation of infrastructure in an economy which, in turn, exerts a positive effect on government expenditure on financial development. The results supported the findings of Chen et al. (2019). Resource rent does not affect financial development in this study, rejecting both resource curse and resource blessing theory. Rule of law negatively affects financial development in line with Khan, Khan and Ali (2020). The countries having a strong rule of law would have good financially developed structures and vice versa. Since ALC does not have a considerably good rule of law as indicated by their values, therefore this might have put an adverse effect on financial development.

The current study did not find any impact of corruption on financial development during GFC, so H2, that is, negative impact of corruption on financial development in ALC during GFC was rejected. This study seconds the work of Eksi and Dogan (2020). Although, GFC had a harmful effect on economic growth and financial development on the world's economies. However, in this study the impact of GDP per capita growth on financial development remained insignificant. One justification of this insensitiveness can be their low share in financial development and GDP contribution to the world. According to a report of International Monetary Fund (IMF), total nominal GDP of ALC stands at merely 3.55% of the world share of GDP. The majority of ALC are either developing or underdeveloped, so this less share in the world might have saved them as compared to developed countries. This blessing in disguise can be attributed to the positive effect of government expenditure, resource rent, and rule of law on financial development. An increase in productive spending during GFC can be the reason of the positive effect of government expenditure on financial development. Similarly, the government might have received an increased amount of natural resource rent as capital from other avenues was dried up during GFC.

AS was an aggressive and ruthless movement that erupted in the Arab world which caused political instability and turbulence in the region as a whole. Mnawar (2015) considered deterioration in the quality of finance as one of the main causes of this crisis. More specifically, financial along with administrative corruption paved the way for this spring. The results also

pointed to the adverse impact of corruption on financial development in AS in line with Cooray and Schneider (2018), thus accepting the hypothesis that there is a negative impact of corruption on financial development in ALC after AS. Government spending also negatively affected financial development after this crisis. This negative effect can be explained by huge public spending in the after-effects of AS. Mushtaq and Afzal (2017) considered the economic cause as one of the reasons for this Arab catastrophe. The adverse effect of resource rent on financial development can be warranted by the presence of the natural resource curse after AS. In the chain reaction to AS, natural resources rent of ALC might have risen. However, it created a negative effect on financial development, thus validating the resource curse hypothesis as this hypothesis also advocates a negative relationship between the two. Rule of law exerts an affirmative effect on financial development as ALC countries might have improved their rule of law situation as a chain reaction in their respective countries prompting a positive effect on financial development.

Moreover, the study also validated the moderating effect of rule of law on the relationship between financial development and corruption. By doing so it accepted the H4 that there is the moderating effect of rule of law on the impact of corruption on financial development in ALC. Keppel and Zedeck (1989) were of the view that the proposed moderator must be an independent variable and then it can be used as an interaction term. The significant positive effect of interaction indicates the moderation of rule of law on the relationship between financial development and corruption. This result implies that a better rule of law would enhance financial development in ALC. Sayılır et al. (2018) categorized rule of law as one dimension of governance mechanism and according to the strong law and order it leads to an increase in FSD. Thus, ALC countries can increase their financial development by strengthening the law and order.

## Conclusion

The current study determined the impact of corruption on FSD in ALC during the time period 2001-2020, as there were key reforms introduced in ALC during this time period. The results revealed an adverse effect of corruption on financial development during the said period. The study found no effect of corruption on the financial development of sampled countries during the financial crisis of 2008. Although, a negative effect of corruption was found after Arab Spring. The study also accepted the

moderating role played by the rule of law and its impact on financial development. The results would be beneficial for policymakers to enhance the understanding of the factors affecting FSD and the role played by corruption in it. They can devise policies to increase financial development and reduce corruption accordingly.

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