

**MENA region remains at crossroads:**

**A panel analysis modelling political stability and economic freedom to determine economic growth**

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**Abstract** *This paper seeks to revisit the theoretical and empirical literature to assess the MENA region's economic growth indicators after more than 10 years of the Arab Spring events and it aims to examine how political stability and higher scores of economic freedoms affect economic growth in 14 MENA region countries over a time span of 20 years from 2001- 2021. The main econometric estimation uses the Arellano–Bover/Blundell–Bond model via a Generalized Method of Moments (GMM) estimator to address the endogeneity and reverse causality existing between political and economic freedom measures and economic growth. The main findings detect a positive relationship between political stability and economic growth across robust estimations, whereas a positive relationship was confirmed for most of the Economic Freedom Index components to impact economic growth.*

**Key Words:** *Economic Growth, Governance, GMM, Arab countries*

**JEL Codes:** *C23, O43, O53*

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## **Introduction**

The MENA region with its 21 countries has been historically known for the complex and diverse nature of its economies. The region's geographical location spans across two continents, with a population of over 500 million people (International Monetary Fund, 2021). The region is endowed with its unique cultural, linguistic, and geographical landscape; however, it has considerable economic challenges and some of the evident ones are the high unemployment rates, poverty, and income inequality. The Region's economic diversity has always introduced a striking contrast between its economies with some countries relying heavily on oil exports, while others are privileged by the presence of a more diversified economy. For instance, in 2020, oil exports accounted for more than 90% of Saudi Arabia's total exports and it was the case for the 6 Gulf Cooperation Council countries (GCC) with varying reliance on oil, meanwhile, in Egypt, oil exports contributed only about 10% to its total exports (OEC World, 2021). Additionally, the region has significant potential for renewable energy, with countries like Morocco and Egypt investing in wind and solar power. Hence, the world bank's classification of the Region's countries introduced three baseline classifications. First, the resource rich labor abundant countries representing countries such as Algeria, Iraq and Syria. Second, resource rich labor importing countries representing the GCC and finally resource poor countries such as be Egypt, Jordan and Lebanon (World Bank, 2007)

The Middle East and North Africa region is one of the regions' known historically to have embarked on a myriad of challenges and suffered from sequential episodes of political instability, poor governance performance, civil wars, waves of upheavals, turmoil and more seriously failed states. All the precipitating events in the region led to repercussions reflecting on its countries' economies. The mainstream literature focused on the relationship between political instability indicators and economic growth and, they came to the common consensus that the region's political instability hampered its economic growth. As well, policymakers' inability to plan ahead exacerbated the region's subpar performance in the short run and long run (Campos & Nugent, 2002; KIRŞANLI, 2023; Tang & Abosedra, 2014) There is no doubt that the region's trajectory towards recovery requires more than 30 years in transition as per the analysis of regional experts (Carothers, 2002). More importantly, the region's complexity was aggravated through the presence of oil's vested interests and the rentier nature of some of its economy, which certainly took a toll on its governance indicators and border conflicts.

In addition, the global dual supply and demand shock provoked post covid-19 as indicated by Baldwin & Tomiura (2020), led to the falling energy

demand associated with the supply chain interruptions. It further raised the cost of production and the over inflated burden of public debts. Notwithstanding that the region is privileged by its oil rich countries like Iraq, which is highly dependent on oil revenues, but at the same time, it has been emersed by Iraq civil conflicts and unrest. Despite the Economic Reform Structural Adjustment programs (ERSAP) launched in the number of MENA countries by the International Monetary Fund during the 1990s to revamp the region's economic performance and to streamline its countries' policies and introduce down rooted labor market changes, yet the region's growth has not yet reached its full potential (International Monetary Fund, 2021). Hence, it still remains to be seen how those programs could be monitored, benchmarked and re-assessed to leverage their economic, political and social impact.

On the one hand, political instability is considered one of the most critical issues facing MENA. The Arab Spring, as a wave of uprisings swept across the region in 2011 and framed an urgent need for political reforms and greater democratic participation in the region. The aftermath of the Arab Spring has been mixed, with some countries, such as Tunisia, witnessing significant progress and moving steadily towards its trajectory to reconcile political reform, while others, such as Syria and Yemen, have experienced ongoing conflict and instability. On another hand, economic freedom is another indicator that should be taken into account when opting for accelerated growth in the MENA countries. The Economic Freedom index measures (EFI) originate from the Heritage Foundation, and they briefly seek to identify the extent to which a country's institutions and policies are consistent with free practices of protecting investors' property rights, contracts enforcement, size of government spending and trade openness. Other components included on the EFI would measure the government effort to arrange for the provision of small number of "public goods," such as national defense and access to stable money (Economic Freedom Basics, 2016).

According to the Heritage Foundation's 2021 (EFI), most countries in the MENA region already scoring below the threshold of 50 are known to be repressed on the (EFI). Only a few exceptions limited to the United Arab Emirates and Qatar have managed to score decently well on the index. (Heritage Foundation, 2021). It is needless to mention that low economic freedom scores in some of the region's countries were found to hinder economic growth, as per a considerable stream of the literature and hence it affects credibility in conducting business, deterring foreign investment and stifling growth of small and medium enterprises (Ahmed el al., 2023; Akin et al., 2014; Brkić et al., 2020). Finally, other countries in the region, such as Tunisia and Morocco, have taken steadfast steps towards improving the preparedness of their business climate and attracting foreign investment.

Hence, this paper aims to examine how political stability and higher scores of economic freedom affect economic growth in 14 MENA region countries over a time span of 20 years from 2001- 2021. It opts to measure political stability through the index of political stability and absence of violence and the number of years the chief executives stay in the office. Furthermore, the impact of the individual subindexes of economic freedom on economic growth is investigated in order to provide recommendations to policy makers concerning priority areas of economic freedom. The paper's main contribution is covering aspects of political stability and economic freedom and estimating its impact on economic growth for MENA countries with more 10 years later after the Arab Spring upheavals and post COVID-19. The main econometric estimation followed optimizes between the use of random and fixed effects for panel data, and finally selects the Arellano–Bover/Blundell–Bond model estimated using the Generalized Method of Moments (GMM) to address the endogeneity and reverse causality existing between political and economic freedom measures and economic growth. The main findings of the paper support across estimations the positive relationship between political stability and economic growth, in addition to positive relation between economic freedom index and its sub-indices and economic growth, with the exception of tax burden and property rights.

## **Literature Review**

### **The theoretical framework: Updating the linkages between Institutions and Economic growth**

The essence of the theory investigating the linkages between institutions and economic growth was driven from the mainstream literature, which advocated the presence of consolidated political institutions with a broad distribution of political power and a capable state. This comes supported by the strength of economic institutions and how their credibility and transparency would prevent rent seekers and curb the dominance of the elites. Along this line of thought a vast number of theories emerged related to the nexus between institutions and economic growth, among which were theories related to export-oriented growth, political business cycle and finally Olson's theory of stability and growth (Gerschenkron & Hirschman, 1962; Nordhaus & Okun, 1970; Olson, 1982; Winters & Yusuf, 2007).

In fact, North (1990) was one of the first authors to include the legal system, laws protecting property rights and governmental effectiveness, as the building block towards fostering economic growth (Acemoglu & Robinson, 2019; North, 1990). This theory is founded on the notion that robust institutions are necessary for producing a predictable and stable

economic environment, which promotes investment and entrepreneurship. In order to accelerate investment and entrepreneurship, institutions need to be able to provide a predictable and stable environment for all stakeholders to include firms and investors. Theoretically, nations with strong institutions typically have more effective markets, a greater percentage of entrepreneurial activities, and better access to credit and finance (Acemoglu & Robinson, 2002; Knack & Keefer, 1995; North, 1990). Strong institutions may also support economic growth by ensuring the rule of law, preventing corruption, and providing a framework for resolving conflicts. They contend that in order to encourage long-term economic growth and development, inclusive institutions are essential.

As for, the export-oriented growth theory especially during the European economic expansion during the 19<sup>th</sup> and 20<sup>th</sup>, it refers to how might political stability and economic freedom both be crucial factors in bolstering a nation's economic development through exports. Countries can gain from economies of scale, increased competition, and access to markets with greater potential and concentration power in manufacturing products and services for export, this in turn reinforces the long-term nexus between economic growth and strong institutions driven through export-oriented economies. (Gerschenkron & Hirschman, 1962; Hessels, & van Stel, 2011). By the same manner, many developing nations, especially those in East Asia, pursue export-oriented development plans, as a means of achieving economic growth in the 1980s and 1990s, the notion acquired even more traction. These nations concentrated on creating goods and services for export, frequently in sectors like textiles and electronics (Winters & Yusuf, 2007). In addition to several papers in the literature modelling the relationship between trade openness and political institutions in MENA and other regions have meant to clarify the linkages between functioning institutions and increased trade-flow intensities, even when they witnessed disparities in their growth rates (Acemoglu & Yared, 2010; Anderson & Marcouiller, 2002; Davoodi & Abed, 2003; Gylfason et al., 2015; Kamel 2021).

According to the political business cycle theory, short-term political issues might occasionally take precedence over long-term economic considerations, which confirms the strong linkages between political stability and economic growth. The theory emphasizes the importance of the political arena and how it may affect economic outcomes and shed light on how it is crucial for policymakers to take both short-and long-term economic goals into account when planning. Despite its shortcomings, the idea has a significant impact on how intertwined political stability and economy freedom indicators might be. The theory seeks to define the mechanisms through which political variables might affect economic results and to explain the link between political performance and economic performance. In essence politicians are

motivated to alter economic conditions in order to increase their prospects of winning re-election. In the run-up to an election, politicians may utilize expansionary fiscal or monetary policies to stimulate the economy in order to provide the perception of economic development and maximize the probability to win the election. Politicians may also implement contractionary measures to slow economic development in the early years of their administration to set the stage for expansionary measures that will take effect later closer to an election. However, this could result in decisions that support short-term economic development while simultaneously causing long-term instability or even a catastrophe in the economy (Nordhaus,1975; Dubois,2016).

Olson's (1982) theory is predicated on the notion that members of a society would cluster together into interest groups in order to achieve their own personal goals. Labor unions, business associations, and other forms of organizations are examples of these interest groups. The very existence of powerful interest groups can affect economic growth in two important manners. First, interest groups may advocate for laws that support economic expansion, such as spending on infrastructure, education, and R&D. Second, interest groups can assist in resolving issues through collective action that could otherwise prohibit funding for public goods. As the Olson theory has several important ramifications, one of which is that nations with robust interest groups are more likely to enjoy steady economic growth over the long run. However, societies with weak or non-existent interest groups may find it difficult to have long-term growth since there is no motivation for people to support or invest in public goods. This theory offers a useful framework for comprehending the part that interest groups play in fostering comprehensive economic growth.

### **Empirical literature for indicators measuring quality of political institutions and their impact on economic growth**

Most of empirical literature revolves around finding indicators which were employed to measure the quality of political and economic institutions and show their impact on growth. The vast majority of studies detects a negative relationship between political instability and economic growth on the short run and long run. One of the studies examines the complex causal relationship between corruption, political instability, and economic development in the Economic Community of West African States from 1996-2012 through a Granger causality test (Nurudeen et al, 2015). By the same manner, other studies utilize a plethora of political unrest proxies such as

strikes, regimes shift, elections, and terrorism to model their impact on economic growth in Pakistan. In the latter study terrorism is found to be one of the root causes behind the negative impact on economic growth (Tabassam, et al, 2016). Moreover, several studies apply alternative variables to capture economic growth, through using a set of developmental determinants such as human capital and environmental variables. These studies rely on substituting for their dependent variable the Log GDP per capita, CO2 emission per capita, average years of schooling, capital investment to GDP and in addition, they incorporate the corruption perception index which was developed by Transparency International to measure the size of effectiveness of political and economic institutions. Finally, they verify that political stability is axial to the acceleration of economic growth for developing countries, with an evident negative impact of political instability on aspects of economic development (Uddin et al., 2017). A similar study conducted by Abu Murad & Alshyab (2019), confirm the presence of a stable long run cointegration between political instability and economic growth through the inspection of a time series model in Jordan from 1980 to 2015.

One of the commonly used political stability variables acting as a determinant of economic growth has been captured through the frequent turnover of political leaders, including presidents, which would lead to policy uncertainty and instability and sluggish economic performance. The literature advocating the narrative of political stability explained that the frequent turnover of political leaders would in consequence lead to shaken and not well transmitted decisions which, would undermine the credibility of policy makers. The lower credibility will signal to a turbulent economic vision, which would certainly be evident to investors. The variables used across this realm of studies introduced executive turnover as a proxy for number of presidential transitions and the average duration of presidential terms to estimate executives' turnover. (Acemoglu et al. ,2014; Dincecco et al., 2014).

### **The nexus between economic freedom and growth**

Finally, a vast number of studies in the theoretical and empirical literature have pinpointed to the intertwined relationship economic freedom and economic growth. The economic freedom index (EFI) has been one of the forefront indicators encouraged to be used by the literature to capture economic growth lately (Ahmed el al., 2023; Akin et al., 2014; Brkić et al., 2020). On the one hand, in one of the studies developed by Brkić et al. (2020), the components of economic freedom are introduced as a stimulus to measure economic growth across 43 European countries. The study covers a period of

19 years from 1995 to 2014 using a Generalized Method of Moments (GMM). The study's main results verified the positive linear relation between the index elements and macroeconomic variables.

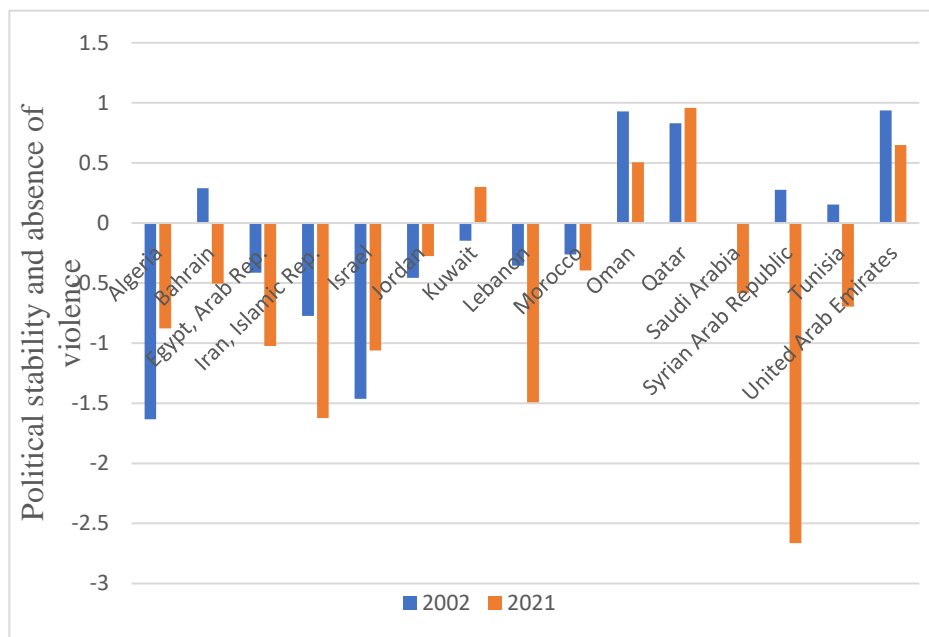
In contrast, the literature has been multidirectional in measuring the impact of (EFI) components on other development indicators like financial development metrics, trade openness and FDI flows. First, Oussama et al. (2017) examines the impact of financial development and economic freedom on economic growth under conditions of well-developed institutions to cover the case of Tunisia through 1980-2014. To analyze the panel data, the study extracts the variables pertaining to size of the government, sound money, regulation of credit, labor and business freedom, the legal structure and security of property rights extracted from all variables reflecting the (EFI). The study confirms that the effect of financial maturity on economic growth improves, when components of (EFI) mediated the relationship between financial development and growth. Second a study conducted during the same year by Fifeková & Vondrová (2016) implies that trade openness and economic freedom affected GDP growth in European Union transition economies between 1996 and 2012 via a cointegration equation to prove the existence of a long run relationship between both. Finally, the third study elaborated by Hussain & Haque, (2016) employs a dataset composed of 57 countries to cover a time horizon of 2004- 2014 and relies on components of the economic freedom to represent trade freedom index, labor freedom index, business freedom index, fiscal freedom through utilizing a two-panel data model with random and fixed effects.

### **Stylized facts and Descriptive data about political stability and economic growth in MENA region**

As previously mentioned, the ongoing episodes of political unrest, turmoil, crisis and wars led to the region's drastically being undermined in political stability and economic growth since 2000. Figure 1 provides a contrast between the ranking of political stability and absence of violence/terrorism indicator across the MENA region between 2002 to 2021. Although some nations had progressed towards being more politically stable, yet others had still regressed and faced deficits in formulating their policies. Overall, political instability and violence continue to pose a threat to the region's performance. The MENA region's performance along this score is in line with its lower-than-average score in the Global Peace Index (average score of 2.94 out of 5) which has discredited it as one of the world's least peaceful areas. (Institute for Economics and Peace, 2021).



Figure 1: Political Stability and Absence of Violence in the MENA Region



**Source:** World Governance Indicators (Heritage Foundation, 2022)

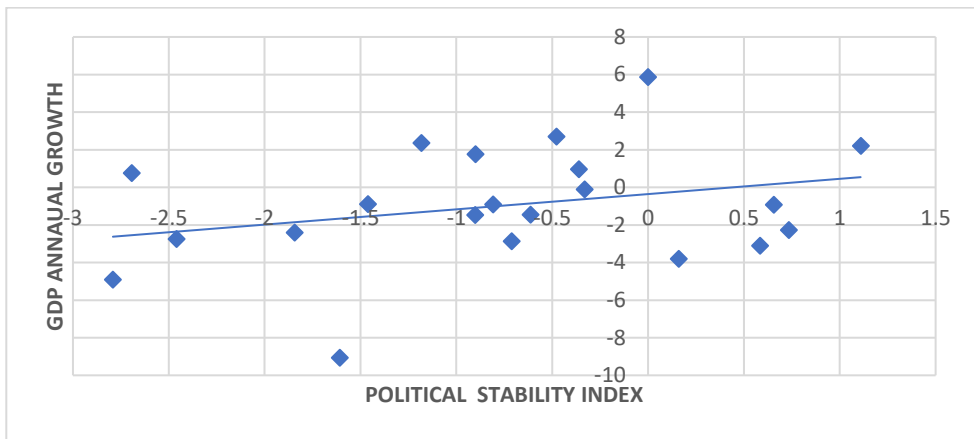
**Note:** The score ranges from -2.5 to 2.5

Most of MENA's countries deteriorated in terms of political stability between 2002 and 2021. Some of the extreme cases scored negative values on the indicator, as in the case of the Syrian Arab Republic, Lebanon, Iran Islamic Republic and Tunisia. According to the world bank (2021), the public health systems in region's countries were already distressed even before the coronavirus outbreak, so the coronavirus exacerbated its countries' instability. Finally, the increase in external public debts for many of these countries during the pandemic period, led to the complete disruption and stoppage of production and the closure of facilities.

The scatter diagram in Figure 2, revealed that there was a weakly positive correlation between political stability index and economic growth in MENA countries. In the meantime, data points were clustered around the upper right-hand side of the diagram, on the interval ranging between [-1:0.5]. This indicator suggested that countries having higher levels of political stability tend to reach higher levels of economic growth. As the relationship is seen to be ambiguous, consequently it was not proven to be robust enough through the descriptive data. Econometric analysis will further investigate the contribution of political stability to explaining the variation in economic growth among the MENA countries.

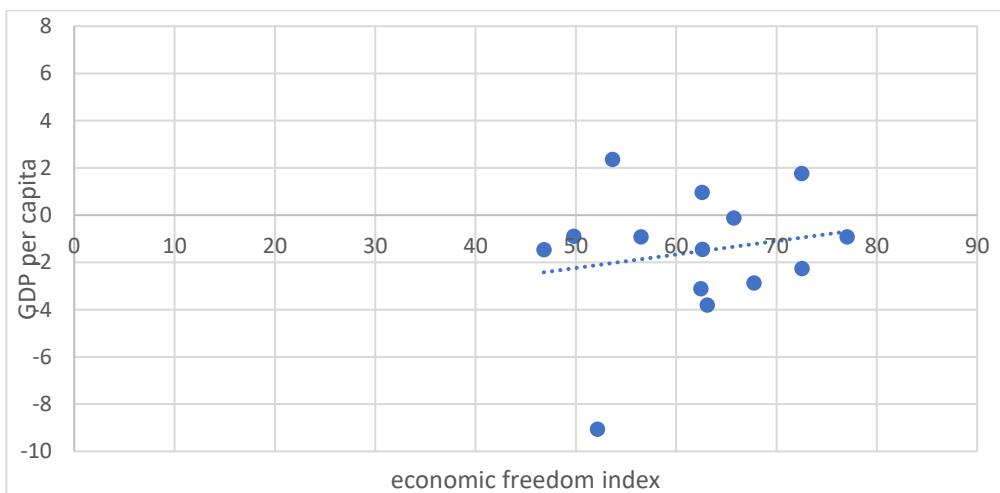
Equivalently the data in figure 3, exhibits the existence of a positive relationship between the economic freedom index and economic growth. The Economic Freedom Index is a measure applied to assess the degree of economic freedom in countries based on several indicators, including property rights, freedom of trade, government size, and regulation and other indicators.

Figure 2: Political stability index and economic growth



Source: Developed by Authors using GDP data World Bank (2022a) and (2022b)

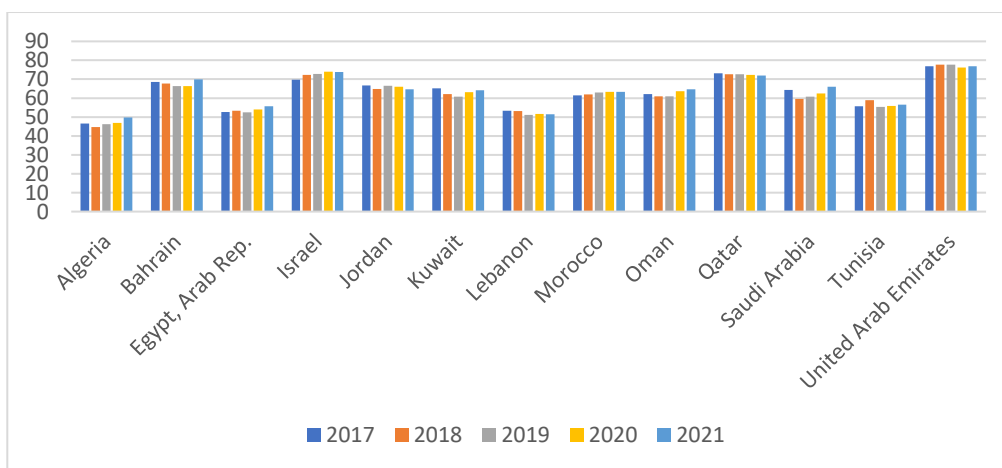
Figure 2: Economic Freedom Index and Economic Growth



Source: Developed by Authors using data from the World Bank (2022a) and The Heritage Foundation(2022)

Over the past ten years, there have been some progress in the MENA region's economic freedom indicators. Some nations have adopted market-oriented policies and reforms which improved their (EFI) rankings over the last 10 years like UAE and Bahrain (Lawson et al., 2021).; meanwhile, others have struggled with political instability, corruption, and a lack of economic diversification. As seen in figure 4, the United Arab Emirates has been the top-ranking MENA region country with respect to the Economic Freedom Index in the period 2017- 2021, followed by Israel, Qatar and Bahrain. Their solid business climate, low levels of corruption, and high levels of economic freedom brought forward the confidence in their investment climate, which was promoted through the adoption of the market-oriented policies and reforms (IMF, 2021). Their institutions have also enacted measures to ease limitations off foreign ownership, streamline the business startup process, and enact a bankruptcy legislation to protect creditors and debtors (World Bank, 2021). The lowest ranking countries were Algeria and Lebanon. Some nations dealt with issues including political unpredictability, corruption, in addition to lack of economic diversity, as seen in the case of Algeria, which has stifled its capacity to expand and prosper (IMF, 2021). Countries scoring in the mid 60s' as the case of Jordan and Tunisia have undertaken relentless measures to apply market-oriented policies and reforms, nevertheless they face high unemployment, and a lack of economic diversification.

Figure 4: Economic freedom index in MENA countries (From 2017 to 2021)



Source: The Heritage Foundation(2021)

## Methodology

The paper employs a panel dataset formed of 14 MENA countries to analyze the relationship between GDP annual growth and each of political stability, economic freedom, and the number of years the chief executives have been in office. Also, the paper examines the relationship between GDP annual growth rate and some of the sub-indexes of the economic freedom index, including tax burden, business freedom, investment freedom, judicial effectiveness, and property rights. Other components of the (EFI) were dropped to avoid multicollinearity. In addition to the main variables of interest, the paper includes a set of other determinants of economic growth, namely, inflation rate, trade openness, gross capital formation as percentage of GDP, general government consumption as percentage of GDP.

The study adopts panel data analysis to estimate two main models with the following general form:

$$GDPG = \alpha + \beta X_{it} + \gamma C_{it} + v_i + \varepsilon_{it}, \quad (1)$$

where:

GDPG is GDP annual growth rate,

$X$  represents the main independent variables of interest which are political stability, economic freedom, and number of years the chief executives stay in office in model 1, and the subindexes of the economic freedom index (tax burden, business freedom, investment freedom, judicial effectiveness, and property rights) in model 2,

$C$  represents the other independent variables which affect economic growth that are used in both models, namely inflation rate, trade openness, gross capital formation as percentage of GDP, general government consumption as percentage of GDP, and  $v_{it}$  and  $\varepsilon_i$  are the error terms.

The econometric estimation uses pooled ordinary least squares, random effects and fixed effects models. Then, Arellano–Bover/Blundell–Bond model is estimated using Generalized Method of Moments (GMM) and employed to address the possible endogeneity and reverse causality which could exist between political and economic freedom measures and economic growth. The Arellano–Bover/Blundell–Bond estimation transforms all regressors, by differencing, assuming that the first differences of instrumental variables are uncorrelated with the fixed effects. This allows the introduction of more instruments and can dramatically improve efficiency. The full method of estimation of Arellano–Bover/Blundell–Bond is explained in Roodman (2009).

## **Results and Discussion**

### **Descriptive Analysis**

The data of the index of political stability and absence of violence is obtained from the World Bank-World Governance Indicators database (World Bank, 2022b); meanwhile, the economic freedom index was extracted from the Heritage Foundation (2022) database, and the number of years the chief executives stay in the office data is obtained from the World Bank/IADB Database of political institutions. All the other data variables are mainly extracted from the World Development Indicators (World Bank, 2022a). The definition of the Middle East and North Africa region varies among studies. This study adopts the definition of the World Bank Development Indicators (WDI) concerning the countries comprising the Middle East and North Africa. However, seven of the MENA region countries, as defined by WDI, are not included in the study due to data availability. The countries included in the study are Algeria, Bahrain, Egypt, Iran, Israel, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, and United Arab Emirates.

Table 1 illustrates a summary of the main variables included in the paper. The paper uses annual panel data for 14 countries from 2002 to 2021. Generally, the score of political stability and absence of violence ranges from -2.5 to 2.5. On that scale, the mean score of MENA region countries included in the study is -0.4 with a minimum of -2.11 and a maximum of 1.2. Except for Oman, Qatar, Kuwait, and United Arab Emirates, the average mean score of all countries is negative. This is despite that the model does not include the high conflict areas like Syria, and Yemen. The economic freedom index ranges from 0 to 100, and the average score of the countries included in the model is 61.8 with a minimum of 36.4 and a maximum of 77.7. The highest average levels of economic freedom are encountered in the United Arab Emirates, Bahrain, Qatar, and Israel, while the lowest levels are in Iran, and Algeria.

Table 1: Data Description

<i>Variable Abbreviation</i>	<i>Variable Name</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>	<i>Unit of Measurement</i>
<b>Inf</b>	Inflation Rate	265	5.348	12.035	-4.863	154.756	Annual Percentage growth rate of consumer price index
<b>TO</b>	Trade Openness	272	88.572	32.831	30.247	191.873	Trade as percentage of GDP
<b>GDPG</b>	GDP Annual Growth Rate	276	3.56	4.664	-25.908	26.17	Percentage
<b>GCE</b>	General government final consumption expenditure	272	17.055	4.697	6.733	30.003	Percentage of GDP
<b>GCF</b>	Gross capital formation	269	27.116	8.346	9.548	50.781	Percentage of GDP
<b>EF</b>	Economic freedom index	280	61.821	8.156	36.4	77.7	Score (range 0-1)
<b>PS</b>	Political stability and absence of violence Index	280	-0.385	0.832	-2.119	1.224	Score (range -2.5 to 2.5)
<b>YE</b>	Number of years chief executives stay in office	268	12.116	10.94	1	50	Count (number)
<b>PR</b>	Property Rights	280	48.192	16.871	10	83.6	Score (range 0-100)
<b>JE</b>	Judicial Effectiveness	70	53.599	15.803	25.3	87.1	Score (range 0-100)
<b>TB</b>	Tax Burden	280	86.233	14.117	40.9	100	Score (range 0-100)
<b>BF</b>	Business Freedom	280	67.295	9.413	39.8		Score (range 0-100)
<b>IF</b>	Investment Freedom	280	49.911	18.939	0		Score (range 0-100)

Source: Authors' calculations where Inf, GDPG, CGE, GCF, and TO data are obtained from World Bank development indicators (World Bank,2022a) YE data are obtained from the World Bank/IADB Database of Political Institutions, PS data are from World Governance Indicators (World Bank, 2022b), and EF and its subindexes (PR, JE, TB, BF, IF) are obtained from the World Heritage Foundation (2022).

Table 2 provides the correlation matrix between the dependent and independent variables in the model. The correlation table indicates possible collinearity between some of the independent variables. However, the mean variance inflation factor (VIF) of both models 1 and 2 did not indicate multicollinearity, as shown in tables 3 and 6, given that the mean VIF values are lower than 10.

Table 2: Correlation Table

PS	EF	YE	Inf	TO	GDPG	GCE	GCF	PR	JE	TB	BF	Inf	
PS	1												
EF	0.5*	1											
YE	0.4*	0.2*	1										
Inf	-	-	-	1									
	0.3*	0.4*	0.2*										
TO	0.5*	0.7*	0.1*	-	1								
				0.3*									
GDPG	0.2*	0.1	0	-	0.1	1							
				0.3*									
GCE	0	0.2*	0.2*	-	-0.1	-	1						
				0.3*		0.2*							
GCF	0.1	-	0	0	-0.1	0.1*	0	1					
		0.3*											
PR	0.4*	0.8*	0.2*	-	0.4*	0	0.4*	-	1				
				0.3*				0.3*					
JE	0.5*	0.8*	0.1	-	0.3*	0.3*	0.2	-0.2	0.8*	1			
				0.3*									
TB	0.5*	0.4*	0.3*	0	0.5*	0	-	0	0.2*	0.2	1		
							0.1*						
BF	0.2*	0.4*	0.1	-	0.3*	0	0.2*	0	0.4*	0.6*	0	1	
				0.3*									
IF	0	0.5*	0.1	-	0.2*	-0.1	0.3*	-	0.5*	0.3*	-	0.2*	1
				0.2*				0.3*			0.2*		

SOURCE: AUTHORS CALCULATIONS

Note: \* p-value &lt;.05

## **Econometric Estimation Results**

### **Model 1: Relationship between Economic Growth and each of Political Stability, Economic Freedom, and Number of Years the Chief Executives stay in Office**

#### **Pooled Ordinary Least Squares**

Table 3 shows the results of the estimation using the pooled ordinary least squares. To reduce the risk of multicollinearity, each of the three main independent variables is estimated in a separate model along with the other independent variables which affect economic growth. The model tests did not indicate heteroscedasticity as the hypothesis of constant variance was not rejected at the 5% level of significance according to Breusch-Pagan/Cook-Weisberg test. Also, no problem of multicollinearity is detected given that the mean Variance Inflation factor (VIF) values are less than 10 for the three sub-models. The estimation results indicate that both the political stability index and the economic freedom index have a significant positive relationship with GDP annual growth rate at the 1% and 5% levels respectively. Meanwhile, the number of years the chief executive stays in office is not significantly related to GDP annual growth rate at the 5% level.



Table 3: Model 1-Results of the Pooled OLS Model Estimation

<b>Variable</b>	<b>(1.1)</b>	<b>(1.2)</b>	<b>(1.3)</b>
	<b>Political Stability</b>	<b>Economic Freedom</b>	<b>Years of Executive</b>
<b>Political Stability</b>	1.172 (3.10) **		
<b>Economic Freedom Index</b>		0.121 (2.22)*	
<b>Years of Chief Executives</b>			0.020 (0.78)
<b>Inflation Rate</b>	-0.186 (4.64)**	-0.172 (4.01)**	-0.201 (4.96)**
<b>Trade Openness</b>	-0.016 (1.76)	-0.022 (1.90)	-0.004 (0.45)
<b>Government Final Consumption</b>	-0.306 (4.96)**	-0.341 (5.26)**	-0.316 (4.95)**
<b>Gross capital Formation</b>	0.072 (2.29)*	0.112 (3.30)**	0.084 (2.63)**
<b>_cons</b>	9.660 (5.22)**	1.737 (0.53)	7.747 (4.32)**

<b>Prob <math>F &gt; 0.05</math></b>	0.000	0.000	0.000
<b><math>R^2</math></b>	0.18	0.17	0.15
<b>Breusch-Pagan / Cook-Weisberg test (H0: Constant Variance) Prob &gt; chi2</b>	0.2049	0.8916	0.0867
<b>Mean Variance</b>	1.12	1.22	1.76
<b>Inflation Factor</b>			
<b>N</b>	256	256	252

Source: Authors' Estimation

Note: \*  $p < 0.05$ ; \*\*  $p < 0.01$ , standard errors are in parentheses

### Fixed and Random Effects Model

The Breusch and Pagan Multiplier tests the hypothesis of whether variances across entities are equal to zero. This hypothesis is rejected for all the three sub-models. This indicates that there is a panel effect and that the random effect model is better than the pooled ordinary least squares model. The Hausman specification test examines whether the individual characteristics are not correlated with the regressors (The null hypothesis is that there is random effect). That null hypothesis is rejected which means that the fixed effects model should be used. The results of both tests are shown in table 4.

Table 4: Model 1: Fixed and Random Effects

Variable	(1.1)		(1.2)		(1.3)	
	Political Stability		Economic Freedom		Years of Executive	
	Fixed	Random	Fixed	Random	Fixed	Random
<b>Political Stability</b>	1.847**	1.025*				
	(-0.84)	-0.554				
<b>Economic Freedom Index</b>			-0.169**	0.000275		
			(-0.0796)	-0.0652		
<b>Years of Chief Executives</b>					0.0643*	0.0522
					(-0.0367)	-0.0334
<b>Inflation Rate</b>	-0.206***	-0.188***	-0.232***	-	-0.207***	-0.195***
				0.200**		
				*		
	(-0.0393)	-0.0396	(-0.0405)	-0.0421	(-0.0395)	-0.0393
<b>Trade Openness</b>	0.0713***	0.00599	0.0748***	0.00809	0.0656***	0.0186
	(-0.0208)	-0.0133	-0.0211	-0.0148	-0.0211	-0.014
<b>Government Final Consumption</b>	-0.664***	-0.476***	-0.716***	-	-0.719***	-0.548***
				0.437**		
				*		

	(-0.0983	-0.0808	-0.0968	-0.0788	-0.0977	-0.0851
<b>Gross capital Formation</b>	0.124**	0.113***	0.106*	0.109**	0.125**	0.119***
	(-0.0536	-0.0432	(-0.0549	-0.0439	-0.0541	-0.0456
<b>_cons</b>	7.071***	9.325***	18.00***	8.224**	6.913**	8.215***
	(2.62)	-2.287	(5.63)	-4.066	(2.67)	-2.345
<b>Prob F&gt;0.05</b>	0.000	0.000	0.000	0.000	0.000	0.000
<b>R2</b>	0.29	0.259	0.289	0.239	0.288	0.269
<b>Beurch &amp; Pagan Multiplier Test( Prob &gt; chibar2)</b>		0.0003		0.0027		0.0000
<b>Hausman Specificati on Test</b>		0.0000		0.0000		0.0000
<b>Observati ons</b>	256	256	256	256	252	252
<b>Countries</b>	14	14	14	14	14	14

Source: Authors' Estimation

Note: \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Standard errors in parentheses

The table also illustrates the results of the fixed effects (cross-section fixed effects) and random effects models. Political Stability has a positive and significant relationship with economic growth under both the fixed and random effects models, which aligns with the results of the pooled ordinary least squares. Under the fixed effect model, an increase in the political stability score by 1 unit is associated with a 1.85 percentage point increase in economic growth. The number of years the chief executive stays in the office has a positive significant relationship with economic growth under the fixed effects model only. An increase in the number of years the chief executives stay in office by 1 unit leads to an increase in economic growth by 0.06 percentage point.

However, the sign of the coefficient of economic freedom does not conform with the expected relationship under the fixed effects model as it indicates a significant negative relationship between economic freedom and economic growth; meanwhile, the random effects model indicated an insignificant relationship between the two variables and the coefficient of economic growth is close to zero. This comes in contrast with the pooled ordinary least squares model, which indicates a significant positive relationship.

Those results could be attributed to the possible endogeneity between economic growth and economic freedom, therefore the Arellano–Bover/Blundell–Bond model is also employed to estimate using Generalized Method of Moments (GMM) in the next section.

### ***Model 1-Arellano–Bover/Blundell–Bond model - Generalized Method of Moments (GMM)***

In order to account for possible endogeneity between economic growth and the main variables of interest, the Arellano–Bover/Blundell–Bond model - Generalized Method of Moments (GMM) is estimated in table 5. The instruments used are the control variables and the lagged dependent variable. The lagged economic growth variable is significant and positive in all models. It is evident that both economic freedom and political stability have a positive significant relationship with economic growth. An increase in economic freedom score by one point (the score ranges from 0 to 100) is associated with an increase in economic growth by 0.36 percentage units. Meanwhile, an increase in political stability score by one point results in an increase in economic growth by 2.34 percentage points (the score ranges from -2.5 to 2.5), ceteris paribus. However, the number of years the chief executive stays in office is insignificant, in contrast with the fixed effects model in which it exhibited a

positive significant relationship with economic growth.

The paper results concerning the relationship between political stability and economic growth are also empirically supported by the previous literature. For example, Aisen and Veiga (2013) who examine the impact of Political stability by using the Political stability Index and found a positive relationship between it and economic development by studying the relationship between political stability and economic development in a sample of 147 countries over the period from 1960 to 2010. The paper results also agreed with Asongu & Nwachukwu (2016) who investigated the impact of political stability and absence of violence on economic development in African countries.

The positive relationship between economic freedom and economic growth also aligns with the previous literature. For example, Brkić, et al (2020) examined the effect of economic freedom with other traditional economic factors on economic growth using panel data and found a positive relationship between it and economic development by studying the relationship between the economic freedom index and economic development in 43 European countries that include the EU and non-EU members. Akin, et al (2014) examined the association between economic growth and the level of economic freedom in countries from five different income categories. The authors highlighted that there is a significant positive relationship between the Economic freedom index and Economic Development by investigating in his study 94 countries through the lens of a panel data analytic approach, the years from 2000 to 2010.

Table 5: Results of Model 1-Arellano–Bover/Blundell–Bond model - Generalized Method of Moments (GMM)

VARIABLES	(1)	(2)	(3)
	Economic freedom	Political Stability	Years of Executive
L.Economic Growth	0.539*** (0.105)	0.472*** (0.104)	<b>0.665***</b> <b>(0.0825)</b>
Political Stability		2.343** (0.935)	
Inflation Rate	-0.0982 (0.0760)	-0.147** (0.0695)	<b>-0.158***</b> <b>(0.0498)</b>
Trade Openness	-0.0629*** (0.0225)	-0.0310** (0.0155)	<b>-0.00798</b> <b>(0.00747)</b>
Government Final Consumption	-0.293*** (0.0731)	-0.195** (0.0991)	<b>-0.173***</b> <b>(0.0641)</b>
Gross Capital Formation	0.131*** (0.0387)	0.0343 (0.0410)	<b>0.0459</b> <b>(0.0328)</b>
Economic Freedom	0.362*** (0.124)		
Years of Chief Executives			<b>0.0297</b> <b>(0.0321)</b>
Constant	-13.41** (6.525)	8.550*** (2.601)	<b>3.704***</b> <b>(1.438)</b>
Observations	244	244	<b>240</b>
Prob F>0.05	0.000	0.000	<b>0.000</b>
Number of Countries	14	14	<b>14</b>
Hansen Test p-value	0.999	0.996	<b>0.999</b>
AR(2) Test P-value	0.467	0.492	<b>0.431</b>

Source: Authors' Estimation

Note: \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Standard errors in parentheses

As for the number of years the chief executives stay in the office, only the fixed effects model proved a positive relationship between the number of years the chief executives stay in the office and economic growth in the selected MENA region countries. However, the other models did not find a significant relationship. Most of the previous literature found a positive relationship between low turnover of political leaders and economic development. For example, Dincecco et al. (2014), who examine the impact of the frequent turnover of political leaders, including presidents, which can lead to policy instability and uncertainty and found that there is a negative relationship between it and economic development. The authors variables

included several measures of executive turnover. The paper results also agreed with Acemoglu et al. (2014) which found that countries with more stable political environments tend to have higher levels of economic growth. The author highlighted that the frequent turnover of political leaders, including presidents, can lead to policy uncertainty and instability, which can negatively impact economic development. Therefore, we recommend that future research lines of research for the region could use more variables to measure the impact of political leader turnover on economic growth.

### **Model 2: The Sub-indexes of the Economic Freedom Index**

Tables 6 and 7 show the results of analysis of the relationship between economic growth and the sub-indexes of the economic freedom index during the period 2017-2021, due to the availability of the judicial effectiveness index data only during such time period. The paper focused on the following sub-indexes: Judicial effectiveness, tax burden, investment freedom, business freedom, and property rights. As expected, judicial effectiveness, investment freedom, and business freedom have a significant positive relationship with economic growth. The model results are robust to the different specifications.



Table 6: Results of Model 2 -Pooled Effects and Random Effects

VARIABLES	(1)	(2)
	Pooled OLS	Random Effects
<b>Judicial Effectiveness</b>	0.191*** (0.0582)	0.194*** (0.0352)
<b>Tax Burden</b>	-0.0924** (0.0387)	-0.0963*** (0.0286)
<b>Business Freedom</b>	0.0964*** (0.0333)	0.0965*** (0.0364)
<b>Investment Freedom</b>	0.129* (0.0739)	0.130* (0.0707)
<b>Property Rights</b>	-0.260*** (0.0760)	-0.263*** (0.0534)
<b>Inflation Rate</b>	-0.249*** (0.0425)	-0.245*** (0.0243)
<b>Trade Openness</b>	-0.00468 (0.0190)	-0.00365 (0.0164)
<b>General Government Consumption</b>	-0.279** (0.104)	-0.302*** (0.0792)
<b>Gross Capital Formation</b>	0.0588 (0.0524)	0.0732 (0.0562)
<b>Constant</b>	3.842 (6.355)	4.042 (6.449)
<b>Prob F&gt;0</b>	0.000	0.000
<b>Observations</b>	59	59
<b>R-squared</b>	0.658	
<b>Number of countries</b>		14
<b>Beurch and Pagan Multiplier Test (Prob &gt; chibar2)</b>		0.5254
<b>Mean Variance Inflation Factor</b>		2.67
<b>Beurch and Pagan Multiplier Test for Random Effects (Prob &gt; chibar2)</b>		0.1125
<b>Hausman Specification Test</b>		0.0697

Source: Authors' Estimation

Note: \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1, Standard errors in parentheses

The estimates of model coefficients for the main variables of interest using the pooled ordinary least squares and the random effects model are consistent with estimates used in (table 6). In fact, the lagrangian Beurch and Pagan Multiplier Test did not reject the Beurch and Pagan multiplier null

hypothesis that whether variances across entities are equal to zero, which means that there is no panel effect. This could explain the very close results of the two model specifications. For robustness check and to consider the possible endogeneity between economic growth and the subindexes of the economic freedom index, the Arellano–Bover/Blundell–Bond model - Generalized Method of Moments (GMM) method is used to estimate the model (Table 7). The estimates of the model's main variables of interest are close to the results of Table 6.

Table 7: Results of Model 2 -Arellano–Bover/Blundell–Bond model - Generalized Method of Moments (GMM)

VARIABLES	Results
<b>L.GG</b>	-0.180 (0.206)
<b>Judicial Effectiveness</b>	0.195*** (0.0380)
<b>Tax Burden</b>	-0.0945*** (0.0248)
<b>Investment Freedom</b>	0.0978** (0.0391)
<b>Business Freedom</b>	0.138** (0.0579)
<b>Property Rights</b>	-0.268*** (0.0600)
<b>Inflation Rate</b>	-0.265*** (0.0255)
<b>Trade Openness</b>	-0.00559 (0.0132)
<b>Government General Consumption</b>	-0.316*** (0.0604)
<b>Gross Capital Formation</b>	0.0573 (0.0483)
<b>Constant</b>	4.686 (5.721)
<b>Observations</b>	59
<b>Number of panelid</b>	14
<b>Hansen Test p-value</b>	0.997
<b>AR (2) Test P-value</b>	0.269

Source: Authors' Estimation

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1, Standard errors in parentheses

According to table 6, an increase in judicial effectiveness score by 1 unit is associated with 0.191% in economic growth, while an increase in investment freedom and business freedom score by 1 unit, leads to an increase in economic growth by 0.129% and 0.0964% respectively. However, both the property rights and tax burden freedom exhibit a significant negative relationship with economic growth, such that an increase in property rights index by 1 unit is associated with a decrease in economic growth by -0.26% and increase in the tax burden freedom score by 1 unit is associated with 0.092% decrease in economic growth. The impact of tax burden on economic growth is subject to debate in the literature which is emphasized through the presence of a negative relationship between tax burden and economic growth. One of the probable interpretations could be in consistency with the Laffer Curve theory. This theory advocates that lower tax rates stimulate output, investment and employment which affects economic growth (Adefolake & Omodero, 2022).

### **Limitations**

One of the limitations of this study is the time horizon of the data. While we have analyzed the impact of political stability and economic freedom on economic growth using available data from MENA region countries spanning from 2001 to 2021 with missing data for some countries in some years, the impact of these factors may be long-term and may not be fully captured by short-term data. There were some missing values for countries which are still suffering from unrest and civil conflicts such as Iraq, Syria and Yemen. Moreover, the endogeneity problem of this study was primarily treated through the Arellano–Bover/Blundell–Bond model - Generalized Method of Moments (GMM) estimated in table 5 and the instruments used are the control variables and the lagged dependent variable, however, it was beyond the scope of the paper to derive novel instruments from the literature to introduce to the GMM estimator and use them as a robustness check for endogeneity.

### **Conclusions**

This research paper aimed to narrow the gap of the lack of information about economic freedom and political stability in MENA countries, as there are few studies that distinguish between the specific components of economic freedom that might impact economic growth in MENA. It also opts to find out whether elements of economic freedom affect economic Development positively or negatively. The GDP annual growth rate is the dependent variable used to measure economic growth and independent variables were

political stability and absence of violence, the economic freedom index, and the number of chief executives stay in the office. Also, the study examined the impact of the subindexes of the economic freedom index on economic growth in the MENA region.

The tests carried out in this research indicated that there is a positive relationship between economic development and each of the main independent variables; the economic freedom index, and the political stability and absence of violence, while the relationship between economic growth and number of years chief executive stays in office was only significant in the fixed effects model. Moreover, for sub-indexes of economic freedom there was a negative relation between annual growth rate and each of tax Burden and Property Rights. As for the presence of a negative relationship between tax burden and economic growth, one of the probable interpretations could be in consistency with the Laffer Curve theory. Laffer curve theory economic effect tends to advocate that lower tax rates stimulate output, investment and employment (Adefolake & Omodero, 2022). Additionally, there was a positive relation between economic growth and each of investment freedom, business freedom, and judicial effectiveness.

In our study, we only focused on only 14 countries of the MENA region, therefore, the future research could focus on more countries. Additionally, future studies may examine the MENA region's sub-regions based in their level of income to provide the policy maker with more insights to understand the nature of the region, as this will help them with the appropriate toolkit of policies used to resolve to region's challenges and at the same time to grasp the connection between political stability, economic freedom, and economic growth. This could make it easier to spot trends or patterns that aren't always visible at the regional level. In addition, the future research can elicit more specific variables to measure the impact of political leaders' turnover and economic growth such as executives turnover, when it is available for all the region's countries.

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