



### **The Physics of Political-Economic Development in the Middle East**

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#### **ABSTRACT**

Analogous to wave particle duality theory, I developed a political-economic model of development for the Middle East. I argue that economic factors represent particles, and political factors represent waves. I argue that economic factors have more speed and mobility than political factors. Therefore, it would not be reasonable to develop policies on countries' development without adjusting and calibrating the speeds of economic and political factors toward equilibrium. I conducted a Vector Error Correction Model (VECM) to determine political and economic speed of adjustment toward equilibrium for Egypt, Iran, Pakistan, and Turkey.

**Key words:** Physics, De Broglie, duality, waves, particles, Middle East, development.

#### **INTRODUCTION**

The interplay between political and scientific development is no longer open to doubt. Kuhn (1962), Ch. VII, argues that "action upon nature became the main object of modern science. The truly practical sciences were now understood to be the natural sciences that would act upon nature, altering its original form to exist in conformity with human comfort". It is well established that Isaac Newton's laws in classical mechanics have had a crucial impact on the ideological, economic, and political theories since the 18<sup>th</sup> century up to the present (1) Newtonian laws of motion influence Karl Marx's theory of historical determinism which delineates the stages of societal development from primitive societies to 'mature communism' (2) the theories of Harmony of interests and the invisible hand of Adam Smith mirror the Newtonian system of universal harmony and equilibrium, and (3) the principle of national sovereignty that dominates the structure of the international system since the Peace of Westphalia in 1648 has been in consonance with the Newtonian law of inertia.

Rationalists aim to provide explanations that are objective and supported by factual observations. This has been the predominant approach in the social sciences, but rationalists are distinguished by their commitment to the notion that international events and institutions are best understood as the outcome of interacting agents, whether they are individual, state, or other collective entities (see Russett, Starr & Kinssella, pp. 33-34). Murray (2013) described the impact of the new scientific approaches on political science, "in a very short time, international relations theory went from the humanities to the social sciences, and students were forced to take crash courses in rational choice modeling, theory-testing and falsification, and system theory. Waltz took us from Machiavelli to Morgenstern and Von Neuman, and drew connections for us between Kuhn, Popper and Lakatos to how we comprehend world events."

Flora Lewis (1983) demonstrated the analogous processes between thermodynamics and political realm, "the second law of thermodynamics applies just as much to the social order as

to the arrangement of matter. Energy is required to avoid entropy and the progressive increase in disorder. Without the regular addition of energy, any system falls apart, and nothing can endure.” In 1690, Christian Huygens published *the Treatise on Light* which is his historic statement of the wave theory of light. Huygens’s contributions to wave theory were not fully appreciated or exploited until the nineteenth century (see *The Wave Theory*, Ch. 6, pp. 139 - 151). George Modelski (1987), *Long Cycles in World Politics* presented his theory in parallel with the physics of waves’ notions and parlance. Modelski’s long cycle theory describes the connection between war cycles, economic supremacy, and the political aspect of world leadership. Long cycles or long waves, offer important views on world politics and fundamental contributions to explaining the recurrence of war. The long cycle, for Modelski, is a period of approximately 70 to 100 years. Under the long-term cycle theory, five hegemonic long cycles have occurred. The first hegemon would have been Portugal during the 16<sup>th</sup> century, followed by the Netherlands during the 17<sup>th</sup> century. Great Britain served twice (first during the 18<sup>th</sup> century and then during the 19<sup>th</sup> century). Since the end of World War II, the US has served as a hegemon.

In recent years many authors have questioned the wisdom of continuing to rely on the Newtonian philosophy to address the emerging problems of the world affairs and domestic issues. According to Kazemi (2015), the Newtonian philosophy does not respond to the conventional epistemological and ontological views of the past. Reliance on mere cause and effect, two dimensional space and time, political determinism, structure, interaction, order, sovereignty and the like are not responsive to our present methodological requisites.” The publication of the innovative book *Quantitative Politics: applying quantum theory to political phenomena* (1991), edited by Theodore L. Becker, popularized the new approach and made it a key subject in political debate. According to Becker (ibid, as cited by Kazemi 2015), “quantum physics provides the means for replacing 18<sup>th</sup> century political and economic philosophies with a new paradigm more consistent with our understanding of physical reality.” The central argument here is that the Newtonian universal view that was dominant in the 19<sup>th</sup> century is no longer viable for explaining political, economic, and social phenomena. Kazemi (2015) suggests that “the Newtonian theory is more attuned to classical and liberal democracy thinking and, thereby, to indirect, representative democracy. On the other hand, quantum theory is linked to participatory democratic thoughts.”

Recently James Der Derian and Alexander Wendt (2023), in their *Quantum International Relations: A Human Science for World Politics*, made the case for a new approach to world politics that takes into account the insight of quantum physics. Der Derian and Wendt gathered the work of rising scholars and leading experts in the field to present the core principle of quantum mechanics and the potential of these ideas to revolutionize all aspects of international relations. Laura Zanotti (2019), *Ontological Entanglements, Agency and Ethics in International*, argues that quantum ontology invites us to rethink how the world is, how we fit in it. Therefore, they pave the way for reimagining political agencies and justifying ethical decisions. As Karen Barad (2007) put it in her *Meeting the Universe Halfway*, “we do not obtain knowledge by standing outside of the world; we know because we are of the world. We are part of the world in its differential becoming.”

### **Quantum Physics of Development in the Middle East**

The nature of light has gone through long theoretical and experimental debates since Isaac Newton (1643 – 1727) advocated the particle nature of light. Conversely, Christian Huygens (1629 – 1695) adopted the opposing wave approach. Huygens’s approach was supported by Thomas Young’s interference experiment in 1801, and François Arago’s Poisson spot in 1819 (Andrade & Bell, 1947; Barr, 1963). Albert Einstein’s (1879 – 1955) interpretation of the photoelectric effect in 1905 with discrete energies for photons remained controversial for indicating the particle behavior of light until Arthur Compton’s (1892 – 1962) experiments

(from 1922 to 1924) demonstrated particle like momentum and energy of light, in support of Einstein. The controversy on the nature of light held the attention of the scientific milieu until 1924; however, the controversy arose when Louis de Broglie developed the theory of the wave particle duality of light. De Broglie proposed that particles are bundles of waves (wave packets) that move with group velocity and have an effective mass (see Gibbins, 1987, pp. 36-46; Mourici, 2007). Accordingly, the motion of a freely moving particle can be described by a plane wave with the function  $\psi = A \cos(\kappa x - \omega t)$ . However, the results of the mathematical calculations result in a serious problem because the speed of the waves is not in congruence with the speed of the particles: the speed of the wave is approximately 1/2 the speed of the particles. Consequently, it would not be feasible to investigate the behavior of such entities because the waves and particles do not travel together. According to Shwartz (2024), the wave function  $\psi(x, t)$  contains information about the probability of locating the particle in a particular region or space by producing wave packets, that is, shrinking the speed differences between waves and particles in order to examine the entity's behavior.

De Broglie's findings have drawn a demarcation line in the philosophy of Quantum Physics. Consequently, the notion of wave-particle duality has become a cornerstone in the realm of physics, and its ramifications have extended to social sciences. By all accounts, the wave-particle duality theory challenges our classical understanding of reality. This suggests that the universe at its most fundamental level is not deterministic, as classical physics would have us to believe, rather, probabilistic. Wave-particle duality is closely related to Heisenberg's uncertainty principle, which states that the position and momentum of a particle cannot be precisely measured simultaneously (see Griffiths & Schroeter, 2018, pp. 1,2,17).

In light of the wave-particle duality theory, I developed a political-economic model of development in the Middle East. I argue that economic factors such as labor, investment, capital, military spending, and technology represent particles; In contrast, political factors such as electoral democracy, liberal democracy, deliberative democracy, participatory democracy, egalitarian democracy, freedom of expression, political corruption, women empowerment, academic freedom, and government accountability represent waves. Based on the disparity between wave and particle speeds, I argue that economic factors have more speed and mobility than political factors. Therefore, it would not be reasonable to develop policies on countries' development without inducing necessary adjustments between economic and political factors toward equilibrium (see Griffiths, 1995). Thus, balancing and adjusting political economic factors toward equilibrium should be the contrivance that lead to vibrant political and economic development in the Middle East.

### **Political Economic Adjustments Toward Development Equilibria**

Sen (1999, pp. 3-11) noted that development requires the removal of major sources of unfreedom: poverty and tyranny. Political and civil freedoms are constitutive elements of human freedom and are necessary condition for scientific and technological creativity. These freedoms are part and parcel of enriching the process of the development. Other characteristics of political regimes are equally important in understanding this process. The most relevant characteristics of the political system are electoral democracy, liberal democracy, deliberative democracy, participatory democracy, egalitarian democracy, freedom of expression, political corruption, women empowerment, academic freedom, and governmental accountability. These characteristics contain multiple institutional components that interact with each other in a complementary manner to foster human development. Competitive elections establish a relationship of accountability between electors (principals) and leaders (agents) such that principals punish agents who do not perform as expected (Ferejohn, 1986). Accordingly, any relationship between democracy and development involves masses and elites within a structure of electoral accountability such that the resources of the state can be mobilized for a common purpose (VD Institute, pp. 6-7).

Therefore, it is essential for the government to communicate development issues to the public and subject them to deliberation as part in the decision-making process. Thus, deliberative democracy is based on the idea that through public discourse and communication, citizens' in civil society is strengthened and the democratic institutions can become more effective and more transparent (see Tabitha 2024, p.1). Governments should devise mechanisms to make the information revolution an asset to the socio-political deliberation. Thus, Rostbøll (2024, p. 166), suggested that citizens must justify their political claims to one another in public deliberation and form their common opinions. It is hoped, as Lustick (2000) puts it, that citizens will not only thereby become better informed, but also more capable, and more inclined to become active in the civic realm. Subsequently, participation is important, as it influences the sense of belonging to the local communities (see also Koutouki & Farget, 2012). However, in order to attain desirable outcomes from political factors, government accountability is necessary. According to Rubin (2005), "accountability can be roughly defined as the ability of one actor to demand and explain or justify of another actor for its actions and to reward or punish that second actor on the basis of its performance or its explanation." Whence, accountability does not refer to the ruler to judge the people, rather, the jurisdiction of the the ruler is accountable to its people. For government accountability to be effective, there must be freedom of expression that includes the right to access accurate information without facing government obstructions. Furthermore, the freedom to form declaration of ideas, and the freedom of forming and holding opinions are essential pillars of freedom of expression.

According to Galston (2018, P. 10), the core idea of liberal democracy recognizes and protects a sphere beyond the rightful reach of government in which individuals can enjoy independence and privacy." Liberal democracy in developing countries faces multiple challenges: from regimes claiming to be based on God's word rather than the will of the people such as Iran; from arrogant meritocracies such as Turkey; from Praetorian governments such as Pakistan; and from ethno-national autocracies such as India and Iran (Galston, 2018, P. 10). Moreover, the challenge of Islamic radicalism in the Middle East have poses serious threats to society and government stability. The lion's shares of religious repressions in the Middle East perturbs women, who suffer plethora of behavioral and normative restrictions. According to the International Labor Organization report (Issue 9), "women empowerment frequently leads to an increased wellbeing of their families and communities. The importance of women as contributors to economic growth and development, as well as the trend towards a closing of gender gaps in other spheres of Middle Eastern societies highlights the importance behind the low female labour (*sic*) force participation and developing effective strategies to address those challenges."

Hadad (2018, p.100) argues that, "while gender equality is indeed recognized as a human right and one of the main goals to achieve a universal sustainable development, women empowerment to reach this equality became the foundation of governmental efforts to full fill this right." According to Hadad (ibid), the Arab states illustrate how legal women empowerment and equality remain work in progress despite national and international efforts to support primarily economic development and how social norms remain more influential even in the face of new legal development. Ramanathan and Vijayalakshmi (2014, p.36), argue that "economic development alone is insufficient to ensure significant progress in important dimensions of women's empowerment, in particular, significant progress in decision making ability in the face of pervasive stereotypes against women's ability". The report (2013, p.2) on *Practice and Policy Implications from the Enterprise Challenge Fund* asserts the significant links between improving women's economic empowerment and overall economic growth. Accordingly, economic empowerment means ensuring that women have the opportunity to participate in, contribute to, and benefit from growth, as well as negotiate respectful treatment.



In the Middle East, Repression has multiple faces: official, societal, and religious. Official repression varies across the Middle Eastern countries. For example, a group of countries devolved into violent conflict (Libya, Yemen, and Syria). Another group of countries witnessed relative stability (Algeria, Morocco, Iran, and the Gulf monarchies). In the former group, academic repression is flagrant and conspicuous in dealing with universities who are barely able to continue to function in a regular manner; scholars and students are subject to intimidation, violence, disappearance, and even torture and killings. In the latter group of the Middle Eastern countries, academic freedom remained more or less stable (see Saliba, 2018). Nonetheless, there is no country in the Middle East that meets the Western standards and criteria of academic freedom. Societal repression submits to the kerygma of Islamic knowledge, which prevents innovative ideas and thus, intolerant of academic freedom. The religious repression of academic freedom is the most dangerous and ruthless because it poses a fatal threat to scholars, thinkers, poets, scientists, and philosophers. For example, the Egyptian thinker Farah Fouda was killed by Islamic radical for his progressive ideas; the Nobel Laureate Najib Mahfouz was stabbed by Islamic radical in Cairo, likewise the Egyptian novelist Tawfiq Alhakeem; and the Lebanese philosopher Husayn Muruwa was assassinated by Hizbollah in Lebanon for his book *Materialism Tendencies in Arabic-Islamic Philosophy*.

### Data and Method

I drew the economic and political data from the GlobalEconomy.com which serves researchers, academics, investors, and others who need reliable political economic data on all members-states of the international system. The dataset includes over 500 indicators for all the 193 countries of the United Nations spanning the period from 1960 to the present. The sources include central banks, national statistical institutes, and multiple international organizations. GlobalEconomy.com was launched in 2012 at Georgia State University in Atlanta. The following economic and political variables were obtained from the dataset. Economic variables include Gross Domestic Product (GDP), which was evaluated in constant 2015 prices, expressed in U.S. dollars. Dollar figures for GDP are converted from domestic currencies using 2015 official exchange rates; Labor Force, this variable for the countries under investigation (Egypt, Iran, Pakistan, Turkey) is plagued with so many missing values, thus, I utilized the annual population growth rate as a proxy for the labor force. Following Rati (1986), Alexander (1990), DeRouen (1993), Mintz and Stevenson (1995), Ward and Davis (1992), Lebovic and Ishaq (1987), and Heo (1998), population growth data are used as proxy; Gross Capital Formation (formerly gross domestic investment) consist of outlays in additions to the fixed assets of the economy plus net change in the level of investors. Fixed assets include land improvements (fences, ditches, drains, etc.); purchased plant machinery, and equipment; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Military Spending includes expenditures on peacekeeping, defense ministries, paramilitary forces, and military space activities. Military and civil personnel, include retirement pensions; operations and maintenance; procurement; military research and development; and military aid. Defense and current expenditures for past military activities, such as for the the veterans' benefits, demobilizations, conversion, and weapons destruction, are not included.

Political variables include Electoral Democracy, which measures the extent to which political power is gained and exercised through free and fair elections; Participatory Democracy measures the protection of individual rights and freedom within a political system; Deliberative Democracy measures the quality of public deliberation and discourse; Government Accountability: measures the constraints on government power through requirements for justification for its actions and potential sanction; Freedom of Expression measures the government respect for press and media freedom, political discussion, and

academic and cultural expression; Liberal Democracy measures the protection of individual rights and freedom of the political system; and women's empowerment is the average for 2022 based on 171 countries was 0.729 index. The highest value was in Denmark (0.961) index point and the lowest value was in Afghanistan (0.035) index point. I used Vector Error Correction Model (VECM) to determine the speeds of political and economic variables. The long run and short run associations between economic and political factors for four Middle Eastern countries: Egypt, Iran, Pakistan, and Turkey.

## Egypt

The Egyptian armed forces have played a central role in the political and economic life of Egypt since the Free Officers Movement (FOM) held power in 1952. Gamal Abdel Nasser, the founder of FOM and later the President of Egypt (1954–1970) engaged Egypt with costly political economic Foreign policy by making Egypt a base for supporting 'national liberation movements' in the Middle East and Africa. Nasserite foreign policy overburdens the Egyptian economy, thus, hampering Egypt's political economic development. The successor of Nasser, President Anwar al-Sadat (rule 1979 – 1980), took a different turn in foreign policy after the the Yom Kippur War on October 6, 1973. Following the Yom Kippur War was a series of negotiations, normalization of the relationship between Egypt and Israel, breaking away from the former Soviet Union, opening up to the United States and Europe, and culminating with the Camp David Accord (CDA) on September 17, 1978. The CDA terminated hostility and commenced a new era of peace and cooperation between Egypt and Israel. President al-Sadat was assassinated on October 6, 1980 by a coterie of Islamic terrorists.

Al- Sadat successor, Hosni Mubark, followed the footprint of his predecessor. At the end of Mubarak's reign in 2011, Egypt was on the verge of social and political chaos which resulted in the implosion of the government during the Arab Spring mass movement on February 11, 2011. The candidate of the Muslim Brothers (al-Ikhwan al-Muslimun), Mohamed Morsi came to power through a clumsy election on June 20, 2012, and was deposed by the Chief of the Armed Forces Abdel Fatta El-Sisi in July 2013. El-Sisi became president of Egypt on June 8, 2014; he delegated massive power to the military and utilized the armed forces to execute economic projects around Egypt. The vicissitudes of Egyptian politics show weak engagement of political factors with economic development because a single ruler dominated all aspects of political economic affairs in the country. Political factors were tested, including electoral democracy, liberal democracy deliberative democracy, participatory democracy, egalitarian democracy, freedom of expression, political corruption, women's empowerment, academic freedom and government accountability against economic growth.

Table (1) shows the speed of adjustment toward equilibrium (SATE) between economic growth (EG) and political factors (PF) for Egypt during the period (1967 - 2022). The SATE values represent the long run association between EG and PFs. As shown in table (1), there are long run associations between all PFs and EG except participatory democracy. The SATE PFs versus EG as follows: electoral democracy (-0.1595), standard error (0.06674), and p-value (0.017\*); liberal democracy (-0.4998), standard error (0.1022), and p-value (0.000\*\*); insignificant participatory democracy (-0.0729), standard error ((0.0425), and p-value (0.087); deliberative democracy (-0.2190), standard error (0.0709), and p-value (0.002\*\*); egalitarian democracy (-0.4599), standard error (0.1096, and p-value (0.000\*\*\*); government accountability (-0.1710), standard error (0.0656), and p-value (0.009); freedom of expression (-0.1084), standard error (0.0561), and p-value (0.054\*); political corruption (-0.3447), standard error (0.0856), and p-value (0.000\*\*); women's empowerment (-0.3076), standard error (0.0866), and p-value (0.000\*\*); and academic freedom (-0.2755), standard error (0.0880), and p-value (0.002\*\*). Unlike the long run association between EG and PFs, there

was no short run association between EG and PFs. As shown in Table (1) all PFs shows insignificant short run impacts on EG (see the number below the SATE in table.1). For example, the short run impact of electoral democracy (-198.76), standard error (1104), and insignificant p-value (0.857); likewise, Academic democracy (608.19), standard error (680.89), and insignificant p-value (0.372). Notice that two stars (\*\*) above the number indicate significance at (0.01) level, and one star (\*) indicates significance at (0.05) level. The SATE of PFs vs. EG ranked from highest to lowest: Liberal democracy has the highest SATE value (-0.4998) among all PFs, whereas participatory democracy has the lowest SATE's value (-0.0729).

## FINDINGS AND POLICY IMPLICATIONS

In parsing the speed of adjustment toward equilibrium (SATE) values in which indicates the strength of the long run association between political variables and economic growth, we can make the following remarks: Firstly, the highest speed of adjustment towards equilibrium (SATE) pertains to liberal democracy with SATE (-0.4998), which indicates a long-run association between economic growth (EG) and liberal democracy. On the other hand, the short-run association between EG and liberal democracy was negative (-509.45) and insignificant. The lowest SATE consigns to participatory democracy with a long-run association with EG (-0.0729), and is significant. However, there is no significant short-run association between participatory democracy and EG. Secondly, from highest to lowest values of SATE the significant long-run associations between political variables and EG downturns in the following order: liberal democracy, egalitarian democracy, political corruption, women's empowerment, academic freedom, deliberative democracy, government accountability, electoral democracy, freedom of expression, and participatory democracy. On the other hand, there is no significant short-run association between any of the above mentioned political variables and EG except, for the political corruption variable which has a significant negative short-run impact on EG.

|                                | <b>SATE</b>          | <b>Economic Growth</b> |                     |
|--------------------------------|----------------------|------------------------|---------------------|
|                                |                      | <b>Standard Error</b>  | <b>P-Value</b>      |
| <b>Electoral Democracy</b>     | -0.1595<br>(-198.79) | 0.06674<br>(1104)      | 0.017*<br>(0.857)   |
| <b>Liberal Democracy</b>       | -0.4998<br>(-509.45) | 0.1022<br>(1385.53)    | 0.000**<br>(0.713)  |
| <b>Participatory Democracy</b> | -0.0729<br>(1226.69) | 0.0425<br>(2472.95)    | 0.087<br>(0.620)    |
| <b>Deliberate Democracy</b>    | -0.2190<br>(992.40)  | 0.0709<br>(980.92)     | 0.002**<br>(0.312)  |
| <b>Egalitarian Democracy</b>   | -0.4599<br>(686.26)  | 0.1096<br>(2111.71)    | 0.000**<br>(0.745)  |
| <b>Gov. Accountability</b>     | -0.1710<br>(239.01)  | 0.0656<br>(178.72)     | 0.009**<br>(0.181)  |
| <b>Freedom of Expression</b>   | -0.1084<br>(338.29)  | 0.0561<br>(349.12)     | 0.054*<br>(0.333)   |
| <b>Political Corruption</b>    | -0.3447<br>(-1183)   | 0.0856<br>(567.31)     | 0.000**<br>(0.044)* |
| <b>Women empowerment</b>       | -0.3076<br>(330.77)  | 0.0866<br>(657.62)     | 0.000**<br>(0.615)  |
| <b>Academic Freedom</b>        | -0.2755<br>(608.19)  | 0.0880<br>(680.89)     | 0.002**<br>(0.372)  |

Table 1. Egypt Speed of Adjustment Toward Equilibrium (SATE) of Economic Growth Vs. Political Variables, T-series (1967-2022); Vector Error Correction Model (VECM); \* Significant at 0.05 level, \*\* significant at 0.01 level

In reference to the interplay between economic factors and economic growth in Egypt, as shown in Graph (1) investment and economic growth during the period (1967 - 2022) go hand in hand, which indicates a co-integration between investment and economic growth. Conversely, as shown in Graph (2), we see a disparity between economic growth and the labor force in the Egyptian economy. Not surprisingly, the population growth, which is a proxy of the labor force, grows at a faster rate than economic growth. The vast growing rate of the Egyptian population is one of the most persistent problem of the Egyptian government.

Nevertheless, Graph (3) shows a congruence between economic growth and defense spending during the period (1995-2022). President Abdel Fattah El-Sisi rules from June 8, 2014, to present (January 1, 2025) delegated the bulk of investments and projects to the Egyptian armed force, thus, we can see the perfect congruence between defense spending and economic growth.



Graph 1. The interplay between economic growth and investment (1967-2022) in the Egyptian economy



Graph (2) The interplay between economic growth and labor force (1967-2022) in the Egyptian economy





Graph (3.) The interplay between economic growth and defense spending (1967-2022) in the Egyptian economy

## Iran

Massive street protests in Iran against the official results of the 2009 presidential election marked the birth of the green movement. At that time, the theocratic regime endured ruthless repression, including, beating, torture, and arrests. Three of the most prominent figures: Mir-Hossein Mousavi and his wife Zahra Rahnava; and Mehdi Karubi have been under house arrest for more than two years. Notwithstanding, the event signified the active political participation of the Iranian people despite the cruelties of the despotic regime (Sundquist, 2013, pp. 19-20; Tehran Bureau correspondent, 2013). According to Jahangir (2010, p. 35), "Iran is unique to the contemporary world. Its political regime combines the mixed features of formal democracy, theocracy, and dictatorship." The Power's center of the entire system is the supreme leader Ayatollah Ali Khamenei since 1989 who has maintained top religious, political, and governmental power, including authority as the supreme commander of the armed force.

The Iranian presidential elections on June 28, 2024 feature six candidates approved by the Guardian Council out of 80 applicants, excluding many prominent figures. The ruling establishment appears to be focused on creating the illusion of a competitive atmosphere in a bid to overcome the unprecedented voter apathy witnessed in the 2021 elections in which the late President Ebrahim Raisi lacked any credible competitor. Over the past four decades, Iran's ruling establishment has consistently organized general elections to shape its governing institutions, including the presidency, parliament and local councils. These elections have witnessed substantial popular participation, averaging around 60%, which is seen by the establishment as an indication of broad legitimacy. Strangely enough, the Iranian Constitution fails to establish a social contract that reflects the will of the nation or guarantees the rights to participation and representation. Instead, it institutionalizes minority rule, reducing citizens to mere subjects in relation to the government. (see Hamdi (2024, pp. 3, 8). Under the Iranian Constitution, citizens lack the right to participate in political decision-making. The jurists, in the name of religion, exercise full guardianship over the system and public sphere. The supreme leader, positioned at the apex of the political hierarchy, serves as the guarantor of both the Constitution and religious governance. He alone determines the regime's adherence to true Islamic teachings and crafts policies, and oversees all institutions. Possessing absolute authority, he stands above the law and popular will.

It has become increasingly challenging to discuss genuine elections within the context of the Iranian regime, which characterized by authoritarianism and a system of governance centered around one-man rule. Democratic elections are not feasible in such an environment, where the rule of law is absent, and there is no constitutional framework that governs both rulers

and the ruled. The authority of the supreme leader transcends constitutional limitations, rendering political accountability virtually nonexistent. Real power resides in unelected bodies, and there is no independent judiciary to impartially ensure individual rights and oversee law enforcement impartially. The person who appoints the head of the judiciary wields ultimate authority, consolidating control over elected leaders who remain subject to the oversight of unelected bodies. The supreme leader's status and legitimacy are often considered divine, unchallengeable, or beyond review. This reality has transformed elections in Iran into a spectacle that seems vibrant in form, regardless of its limited impact on political dynamics. Elections often highlight ideological divisions among political factions, which in turn stimulates public participation in a noteworthy manner. Therefore, over the span of 40 years, the electoral landscape and the interactions among competing forces have appeared contradictory and exclusionary. Despite the presence of multiple factions, these factors support the existing theocratic system. This understanding helps to explain the limited influence of the electoral process on Iranian politics and decision-making, both domestically and internationally. It appears that the electoral process in Iran is merely a procedural formality lacking substantive content. This is evident in the fact that the Constitution fails to ensure the separation of powers, freedom of political participation and representation, and fairness in political mobilization within the system. Additionally, it does not guarantee the rule of law and limits the authority granted to the elected officials. Consequently, the transfer of power is essentially process of role-sharing among the dominant forces within the system (Hamdi, 2024, pp.3, 6,8, 10, 21; Sndquist, 2013, pp.22-23, 27).

|                                | <b>SATE</b>          | <b>Economic Growth<br/>Standard Error</b> | <b>P-Value</b>      |
|--------------------------------|----------------------|---|---------------------|
| <b>Electoral Democracy</b>     | -0.4399<br>(-4.207)  | 0.1133<br>(2.353)                         | 0.000**<br>(0.074)  |
| <b>Liberal Democracy</b>       | -0.5197<br>(-10.439) | 0.1227<br>(6.445)                         | 0.000**<br>(0.105)  |
| <b>Participatory Democracy</b> | -0.3076<br>(1.442)   | 0.1019<br>(6.075)                         | 0.003**<br>(0.24)   |
| <b>Deliberate Democracy</b>    | 0.4722<br>(-2.210)   | 0.1207<br>(1.428)                         | 0.000**<br>(0.122)  |
| <b>Egalitarian Democracy</b>   | -0.5067<br>(-6.103)  | 0.1232<br>(3.959)                         | 0.000**<br>(0.123)  |
| <b>Gov. Accountability</b>     | -0.4453<br>(-0.5779) | 0.1166<br>(0.2885)                        | 0.000**<br>(0.045)* |
| <b>Freedom of Expression</b>   | -0.4594<br>(-1.712)  | 0.1156<br>(1.1486)                        | 0.000**<br>(0.136)  |
| <b>Political Corruption</b>    | -0.5319<br>(-3241)   | 0.1390<br>(0.8477)                        | 0.000**<br>(0.702)  |
| <b>Women empowerment</b>       | -0.3414<br>(1.0300)  | 0.1086<br>(1.671)                         | 0.002**<br>(0.538)  |

Table 2. Iran Speed of Adjustment Toward Equilibrium (SATE) of Economic Growth Vs. Political Variables, T-series (1962-20130); \* Significant at 0.05 level; \*\* significant at 0.01 level; Vector Error Correction Model (VECM).]

Based on Table 2. The speed of adjustment toward equilibrium (SATE) of Economic Growth (EG) versus electoral democracy is (-0.4399), standard error (0.1133), and p-value (0.000); Liberal Democracy is very slow (-0.5197), with standard error (0.1227), p-value (0.000); participatory democracy is (-0.3076), standard error (0.1019), and p-value (0.003); deliberative democracy is (-0.4722), standard error (0.1207), and p-value (0.000); EG versus egalitarian democracy is (-0.5067), standard error (0.1232), and p-value (0.000); government accountability is (-0.4453), standard error (0.1166), and p-value (0.000); freedom of expression (-0.4594), standard error (0.1156), and p-value (0.000); political corruption (0.5319), standard error (0.1390), and p-value (0.000); women empowerment (-0.3414), standard error (0.1086), and p-value (0.002).

In parsing the speed of adjustment toward equilibrium (SATE) values, which indicates the level of long-run associations between political variables and economic growth (EG), I can make the following remarks 1) the political corruption variable marks the highest long-run association with EG, whereas participatory democracy marks the lowest long-run association with EG. 2) All political variables have significant long-run association with EG, however,

the SATE varies across the variables from Higher to lower as follows: political corruption, liberal democracy, egalitarian democracy, deliberative democracy, freedom of expression, government accountability, electoral democracy, women's empowerment, and participatory democracy. 3) There is no short-run association between any of the political variables and EG except for government accountability with coefficient (-0.5779), standard error (0.2885), and significant P-value (0.045).

### Pakistan

Since its independence from the United Kingdom and partition from India in August 1947, Pakistan's historical trajectory has been marked political institutional instability that has led to periodic oscillation between civilian and military rule, and thus preventing it from achieving a stable and legitimate political order. Pakistan's administrative institutions and the manner in which power is exercised by the state have become more arbitrary, dysfunctional and ultimately ineffective, leading to a persistence crises of governance (see Niaz, 2024, P.1) Most of Pakistan's early leaders were liberal Muslims from North India and Bengal who believed in liberal democracy and did not want to create a state that dictated individual religious practices (see Cohen, 2002). Their influence soon waned; however, and Islamist movements emerged in Pakistan. These groups and individuals have begun to wield considerable power and have long aspired to control the Pakistani state. They have never done well at the polls but have always been a factor in the street and through their reaching and preaching. (ibid).

The process of conducting elections after specific periods is a necessary but insufficient condition for a stable democracy. Democratic government made efforts to accomplish the norms of good governance to enhance public participation in the political system. It also makes possible a consensus oriented toward the participation of people in the decision making process. Fair, free and regular elections promotes the democratic governance that strengthens the institutions. Participatory democratic government is a popular notion of political development. Resources allocation in the development process is linked to public participation in decision-making policies. It is focuses on building good governance system to increase popular participation in political development. Over the last sixty years, Pakistan has been an authoritarian polity under both civilian and military regimes. Authoritarianism involves great relevance and obedience to authority, and stands in opposition to the individualism and freedom that come with it. Both civilian leaders from an agrarian and feudal social background and military leaders from the Command and Control structure of the armed forces have demand absolute loyalty and compliance with their institutions of origin (see Niaz, 2024, p. 13)

As shown in Table 3. The speed of adjustment toward equilibrium (SATE) of economic growth (EG) versus electoral democracy is (-1.2051), standard error (0.2486), and p-value (0.000), liberal democracy (-1.2367), standard error (0.2325), and p-value (0.000); participatory democracy, (-1.1406), standard error (0.2378), and p-value (0.000); deliberative democracy (-1.0575), standard error (0.02515), and p-value (0.000); egalitarian democracy (-1.1851), standard error (0.22501), and p-value (0.000); government accountability (-1.0764), and standard error (0.2426), and p-value (0.000); freedom of expression (-1.0472), and standard error (0.2435), and p-value (0.000); and political corruption (-1.1372), standard error (0.2429), and p-value (0.000). The highest SATE was liberal democracy with SATE (-1.2367), and the lowest SATE was freedom of expression with SATE (-1.0472). Ranking SATE from High to low values: liberal democracy, electoral democracy, egalitarian democracy, participatory democracy, political corruption, government accountability, deliberative democracy, and freedom of expression. All the short run associations were insignificant.

|                         | SATE                  | Economic Growth<br>Standard Error | P-Value            |
|-------------------------|-----------------------|-----------------------------------|--------------------|
| Electoral Democracy     | -1.2051<br>(0.2505)   | 0.2486<br>(0.1703)                | 0.000**<br>(0.141) |
| Liberal Democracy       | -1.2367<br>(0.0411)   | 0.2325<br>(0.1524)                | 0.000**<br>(0.787) |
| Participatory Democracy | -1.1406<br>(-618.07)  | 0.2378<br>(394.27)                | 0.000**<br>(0.117) |
| Deliberate Democracy    | -1.0575<br>(-110.28)  | 0.2515<br>(424.03)                | 0.000**<br>(0.795) |
| Egalitarian Democracy   | -1.1851<br>(-892.48)  | 0.2501<br>(844.12)                | 0.000**<br>(0.290) |
| Gov. Accountability     | -1.0764<br>(-0.0104)  | 0.2426<br>(0.1662)                | 0.000**<br>(0.951) |
| Freedom of Expression   | -1.0472<br>(-11.0203) | 0.2435<br>(160.78)                | 0.000**<br>(0.945) |
| Political Corruption    | -1.1372<br>(-306.72)  | 0.2429<br>(0.2429)                | 0.000**<br>(0.898) |

Table 3. Pakistan Speed of Adjustment Toward Equilibrium(SATE) of Economic Growth Vs. Political Variables, T-series (1972-2013; \* significant) at 0.05 level; \*\* Significant at 0.01 level; Vector Error Correction Model (VECM).

## Turkey

According to (Karakas, 2 007, p.9), with the birth of the Republic of Turkey in 1923, the government headed by Mustafa Kemal Atatürk implemented a series of reform aimed at building from scratch a new political system based on a completely new identity. To this end, he introduced a series of policies based on exclusion of religion from the public sphere Immediately after the founding of the state. The Kemalist Cultural Revolution and Educational dictatorship with the goal of Westernization introduced radical changes in political, economic and social levels. All Koranic schools, religious orders, and religious educational institutions were closed; Islamic law was replaced by Swiss civil law, German trade and commercial law, and Italian criminal law; Arabic script was replaced by the Latin Scrip, and the Gregorian calendar replaced the Islamic one; active and passive female suffrage was introduced; regulation promoting Western-style dress were passed and the display of religious symbols in enclosed public places was banned. It was not until the 1980s that Turkey saw reflections on the Ottoman past and Islam in the public sphere.

|  | Coef    | St.Err  | P.Value |
|--|---------|---------|---------|
| Economic Growth vs.<br>Electoral Democracy<br>SATE       | -0.0580 | 0.0306  | 0.059   |
| Economic Growth vs.<br>Participatory Democracy<br>SATE   | -0.0800 | 0.0285  | 0.005*  |
| Economic Growth vs.<br>Deliberative Democracy<br>SATE    | -0.1807 | 0.0672  | 0.007*  |
| Economic Growth vs.<br>Egalitarian Democracy<br>SATE     | -0.1190 | 0.03253 | 0.000   |
| Economic Growth vs.<br>Government Accountability<br>SATE | -0.1768 | 0.1419  | 0.008*  |
| Economic Growth vs.<br>Freedom of Express<br>SATE        | -0.2089 | 0.06607 | 0.002*  |
| Economic Growth vs.<br>Women Empowerment<br>SATE         | -0.2363 | 0.0689  | 0.002*  |

Table 4. Turkey Speed of Adjustment Towards Equilibrium (SATE) Of Economic Growth Vs. Political Variables, T-series (1963-2020); Vector Error Correction Model (VECM).

From this moment onward, a political change began based on the beginning of the transfer from the military to the civilian sphere. On April 14, 1987, Turkey applied to full membership to the European Economic Community (EEC). On December 18, 1989, the EEC's decision on Turkey's application stated that: "the Community is unable to accept any new members before completing its internal integration. Due to obstacles in joining EU, President Recep Tyyip Erdogan directed his political and diplomatic attention toward the



Middle East region and the Islamic World in an attempt to restore its Islamic leadership and restore the “glorious days” of the Ottoman empire. On July 15, 2016 a coup d’état was attempted against Erdogan’s government. The government accused the Gullen Movement of carrying out the coup. Fethullah Gullen is a moderate Turkish Philanthropist, businessman, and educator who lives in Pennsylvania in the United States. Gullen has suggested that coup was in fact a “self coup” carried out by Erdogan in order to consolidate his grip on power. The coup’s aftermath reflects the chasm between Erdogan and his Justice and Development Party (JDP) in one side, and the armed forces and civil society on the other side. Erdogan’s purging campaign was and “administrative massacre”: more than 130,000 people have been purged from public services, including tens of the thousands of teachers and about 6000 academics. In addition to to 170 generals and about 7000 other senior military officers being arrested as part of the crackdown, with at least 58 generals and 629 senior officers convicted to life terms in prison Turkey is distinguished from many of its European counterparts not only in terms of its unstable and fragile economy but also by its political life, with regards to interruption in freedoms and democratic governance. However, it would be unfair not to emphasize that Turkey, at the same time, is a role model for Middle Eastern countries with its working, if imperfect, democracy. Turkey’s movement toward democratic consolidation and economic stability has been full of ups and downs: three direct military interventions that paralyzed democratic politics in Turkey occurred in the year 1960, 1971, 1980, and 2016.

As shown in Table 4. The speed of adjustment toward equilibrium (SATE) of Economic growth (EG) versus electoral democracy is very slow (-0.0580), standard error (0.0306), and insignificant p-value (0.059); participatory democracy is (-0.0800), standard error (0.0285), and p-value (0.005); deliberative democracy is (-0.1807), standard error (0.0672), and p-value (0.007); egalitarian democracy is (-0.1190), standard error (0.0325), and p-value (0.000); government accountability is (-0.1768), standard error (0.1419), and p-value (0.008); freedom of expression (-0.2089), standard error (0.0660), and p-value (0.002); women empowerment is (-0.2363), standard error (0.0689), and p-value (0.002). The level of long-run association between political variables and EG for Turkey varies from highest to lowest as follows: women empowerment ranks the highest with SATE (-0.2363) while electoral democracy ranks the lowest with SATE (-0.05). Based on the SATEs values from high to low: women empowerment, freedom of expression, deliberative democracy, government accountability, egalitarian democracy, participatory democracy, and electoral democracy. Two of the political variables do not have significant long-run association with EG: electoral democracy as well as egalitarian democracy. The remaining political variables: participatory democracy, deliberative democracy, government accountability, freedom of expression, and women empowerment have significant long-term association with EG.

## Conclusion.

This study offers significant assistance to policy decision-makers in the Middle East by determining the divergence between the speed of political and economic factors, which allows decision makers to conduct the necessary reforms/corrections to achieve the necessary balancing of political and economic trajectories of development. Nevertheless, abridging the gap in political and economic factors acquires very serious work from the government and society. In the countries investigated in this study: Egyptian policy makers need to make great efforts because the speed of adjustment toward equilibrium (SATE) is very slow. The trajectories of the labor force (population growth as a proxy) diverges badly from economic growth; that is a chronic problem in the Egyptian society that needs to be adjusted. Iran and Pakistan are doing better than Egypt in balancing the political and economic factors in their development process. The Turkish development process is going through poor performance; the SATE is very slow.

Theorists of International relations, realists such as Hans Morgenthau's *Politics among Nations*, Hedley Bull's *The Anarchical Society*, Edward Carr's *The Twenty Years' Crises*, and neo-realists such as Kenneth Waltz's *Theory of International Politics* concur that the state is the main actor in the international system. Waltz recognize that other actors exists, but says that they don't matter. I argue that the classical view of the state as the central actor in the country makes it easier for decision makers to devise political economic reforms by balancing the political and economic trajectories. Some Middle Eastern countries, such as Iran, Iraq, Syria, Lebanon, Somalia, the Sudan, Libya, and Yemen violates the basic principles of the international system externally and internally. For example, Iran violates the non-intervention principle in the internal affairs of other states through its flagrant interventions in Lebanon, Yemen, Syria, and Iraq. Such expansionist policies have had detrimental impact on the Iranian economy. Furthermore, the violation of human rights, women rights, and freedom of speech within the country transform Iran into a hermetic system and a world's Pariah. Serious internal problems that hamper efficient development processes are hybrid actors within the state. A hybrid actor sometimes operates in the state and sometimes compete with it. They depend on the state sponsorship but at the same time enjoy the flexibility that come with not being the state. Those that survive over many years such as Hizbollah in Lebanon and the Houthis in Yemen tend to penetrate state and carve out official fiefdom within its structure. Ultimately, they paralyze the state and impede it from promoting effective development policies. Another problem in the path of development is what the Valdai Club expert Nourhan Elsheick termed 'atomization', when societal fragmentation resulted in the perdition of social cohesion such as in the Sudan, Libya, Somalia, Syria, and Yemen.

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