AMERICAN ARAB

RESEARCH INSTITUTE (AARI)

ISSN 2837-0066 (Print)

ISSN 2837-0074 (Online)

American Arab Journal for Business, Economics and Finance (AAJBEF)

Vol. 1, No. 1 December 2020

Quality Controlled, Double-Blind Peer-Reviewed, Open-Access INTERNATIONAL Journal

Indexed in Library of Congress

Periodical through Annual Issuance

United States of America (USA) - Headquarter

AAJBEF • 5969 GINA PL • COLUMBUS • OHIO 43231 • USA

Website: https://aarinstitute.org/wp-content/uploads/2019/07/AAJBEF-/Journal-Vol.-1-No.-1-December-2020.pdf

ISSN 2837-0066 E-ISSN 2837-0074
Published by American Arab Research Institute (AARI)

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ISSN 2837-0066 E-ISSN 2837-0074
Published by American Arab Research Institute (AARI)

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Volume 1, Issue 1 December 2020

American Arab Journal for Business, Economics, and Finance; Vol. 1, No. 1; December 2020
ISSN 2837-0066 E-ISSN 2837-0074
Published by American Arab Research Institute (AARI)

Testing the Relation between Workers' Remittances and Economic Growth in Egypt

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Received: October 10, 2020 Accepted: November 23, 2020 Online Published: December 25, 2020

Abstract

This study tests the relationship between two variables; the workers' remittances' growth rates and GDP growth rates in Egypt in a trial to find a causal relationship between these two variables in the Egyptian Economy through the period 1990 until 2020. The study finds that Egypt's economic growth rate over the period 1990 until 2020 is significantly positively impacted by the Egyptian Workers' Remittances. The study used Co-integration, Engle – Granger test, Vector Error Correction Model (VECM) and OLS econometric methodology to conduct the long run and short run estimated relationships between these two variables. The World Bank data base for Egypt for these two variables is used, with constant 2017 US dollar basis, to estimate the relationships.

In the long-run, the study estimates that one percent increase in Workers' Remittances growth rate causes GDP growth rate to increase by around 0.018 percent. This relationship can be presented through the following equation;

GDP Growth Rate = 5.51 + 0.018 Workers' Remittances Growth Rate + Error Term

Finally, it is better to the Egyptian government to facilitate the emigration of Egyptian labor force and the workers' remittances transfer to the Egyptian Economy in order to boost economic growth and enhance standards of livings for the Egyptian people.

Keywords: Workers' Remittances, GDP growth rate, Egypt, Co-integration, and VECM.

Introduction:

The role of the workers' remittances in promoting economic growth has been largely studied through a number of research papers. Theoretical as well as applied researchers have showed that workers' remittances has its effects on economic growth since it is defined as the third pillar of economic development whereas their volume is the second to foreign direct investment (Abou Elseoud, 2014). On this regard, examining the relationship between economic growth and workers' remittances has become a crucial issue during the last thirty years.

During the period 1990 until 2020, the Egyptian economy and its workers' remittance have witnessed crucial developments and fluctuations. The Egyptian Government stopped employing workers in the public sector and government institutions. Therefore, Egyptian workers tend heavily to travel abroad in order to find suitable jobs. Those immigrant workers performed huge amounts of money transfers to their families in Egypt, especially during the periods of crises. Consequently, it becomes convincing to examine the relationship between workers' remittance and economic performance in the Egyptian economy.

In Egypt, it is clearly noted that the political and economic conditions have widely changed during the last thirty years which sharply affected the overall economy and the performance of the Egyptian savings in a volatile manner. Moreover, Egyptian Workers' Remittances witnessed volatility and sharp increase through this era. Egyptian workers' remittances flows increased from $4.05 billion in 1990 to $7.9 billion in 2011 and to reach its highest and historical record to become $26.8 billion in June 2019. Finally, it reached $29.6 billion in June 2020.

It is noted that a very limited number of research papers dealt with this topic in case of Egyptian economy. Therefore, the literature of this topic is in need to more research to be conducted within this context. Several gaps are existed in the literature of this topic for the Egyptian case such as describing and analyzing development happened in the workers' remittance during the period 1990 until 2020. In addition, testing the impact of workers' remittance on GDP growth rate in Egypt through this period of time is also missed. Of course, the door is open towards this research paper to provide a crucial contribution on this topic in Egypt.

This topic is considered so demanding for further research, especially in the aftermath of two revolutions with all its impacted fluctuations on the economic performance in general and on the workers' remittance in specific. This suggests the importance of examining the relationship between economic growth and workers' remittances in Egypt based on the economic fluctuations that the economy is facing which represents the core motive behind this research.

Research Importance:

During the period 1990 until 2020, the Egyptian economy and its workers' remittance have witnessed crucial developments and fluctuations. The Egyptian Government stopped employing workers in the public sector and government institutions. Therefore, Egyptian workers tend heavily to travel abroad in order to find suitable jobs. Those immigrant workers performed huge amounts of money transfers to their families in Egypt, especially during the periods of crises.

Consequently, it becomes convincing to examine the relationship between workers' remittance and economic performance in the Egyptian economy. Of course, the door is open towards this research paper to provide a crucial contribution on this topic in Egypt. On this regard, examining the relationship between economic growth and workers' remittances has become a crucial issue during the last thirty years.

Research Objectives:

The paper aims to investigate the impact of workers' remittance on Economic growth in Egypt using annual data for the period from 1990 to 2020. In addition, the paper tries to check the relevance of the empirical outcomes to the theoretical assumptions of a causal relationship between workers' remittance development and economic growth. Moreover, it will provide policy recommendations to the Egyptian policymakers for more development in both workers' remittance and policies related to economic growth.

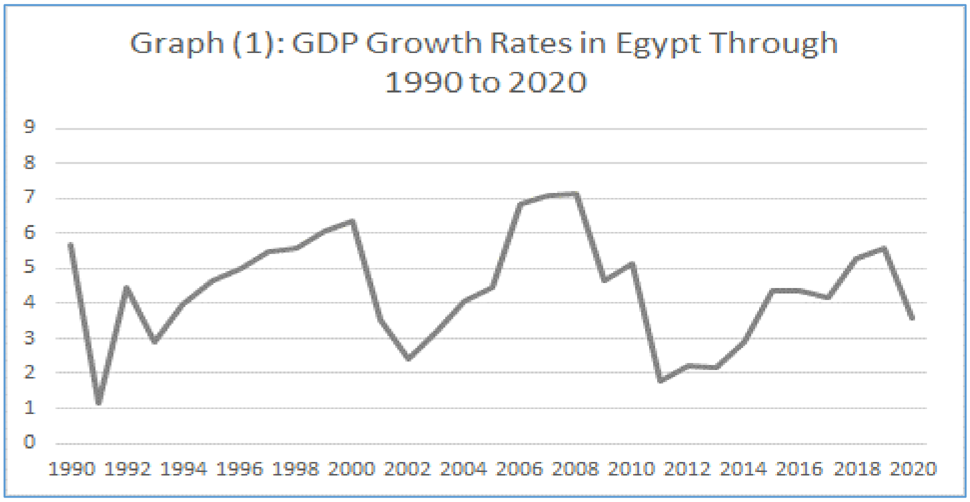
Research Questions:

The paper is targeting to ask important questions related to the causal relationship between workers' remittance and economic growth in the Egyptian Economy during the period 1990 to 2020. The research will answer the following main questions;

What is the causal relationship between workers' remittance and economic growth in the Egyptian economy during the period 1990 to 2020? What are the main developments in the Egyptian workers' remittance sector appeared during the period 1990 to 2020? What are the main policy recommendation that can be submitted to the Egyptian officials to achieve more benefits from this causal relationship?

Discovering the Relationship in Egypt:

According to the economic performance, it is noted that the economic growth in the Egyptian Economy passed through the coming three stages that can be shown in the following graph (1)[1]:



Source: World Bank Data Base

Phase 1: The Period 1990 to 2010: High and Speed economic growth rates:

Two economic measures have been crucial to Egypt's economic progress throughout this time period. First, the government increased the contribution of the private sector to the economy and the market-oriented economic system, allowing the private sector to play a larger role and partially liberalizing the trade sector and the exchange rate regime. Second, a sharp rise in unexpected profits from the privatization program, the travel and tourism sector, and proceeds from Foreign Direct Investment (FDI) increased the country's income. Naturally, the quick increase in tourism profits and worker remittances from outside Egypt allowed the Egyptian government to build up foreign reserves of US dollars, which reached over 36 billion US dollars in 2010.

Consequently, this large international reserves enabled the Egyptian Central Bank to control the exchange rate market. Large windfall revenues did, however, contribute to the GDP's quick

[1] World Bank, Data Base for Egypt in the link: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=EG

growth, but they also had a negative impact on the Egyptian Public Budget, where the government's current expenses, which are primarily made up of wages, subsidies, and interest payments, increased even more quickly than its receipts. This caused a persistent increased budget deficit in the Egyptian Budget. The increased and continuous Egyptian Budget Deficit accompanied by the Dutch disease effect caused crucial rises in inflation rates to reach around 12% in 2010 (Khan and Miller, 2016).

As a result, Nazef Government’s reform program that started 2004 was created with the goal of transforming Egypt's economy into one that was more market-oriented and driven by the private sector. This was done through extending financial reforms, streamlining rules for business and investment, decreasing tariffs, and privatizing state-owned firms. Egypt's economic growth increased as a result, from 4.5 percent in 2005 to 7.2 percent in 2008. This outcome was much better than the Middle East and North Africa's (MENA) overall growth over the same time period.

Consequently, the Egyptian government was able to create around 2.5 million job opportunities through the period 2005 until 2010. Therefore, unemployment rate declined from 11.5 percent in 2005 to 9.2 percent in 2010[2]. However, unemployment remained high since there exists a fundamental skills mismatch between those who suffer from unemployment and the shills required by the private sector businesses.

Small and medium sized businesses (SMEs), who are primarily responsible for creating jobs, are subject to a variety of financial access constraints and are constrained by laws governing both their establishment and growth. As a result, a sizable portion of the Egyptian population did not gain more economically from the higher growth rates. As a result, a sizable portion of Egyptian youth were compelled to leave the country or labour in the nation's expanding informal and unregulated sectors. Notwithstanding this improvement in the macroeconomic environment from 2005 to 2010, the key structural imbalances in the Egyptian economy had still not been addressed by the end of 2010. They included continuing high rates of teenage unemployment, the concentration of power and capitalism, inadequate infrastructural services, a sizable and ineffective bureaucracy, and growing income and wealth disparities. Last but not least, the upheaval in the public sphere in January 2011 was logical.

[2] The Financial Monthly, the Egyptian Ministry of Finance, January 2011.

Phase 2: 2011 – 2014: Low economic growth rates: The Era of Two Revolutions:

In the aftermath of the collapse of Mubarak regime, the macroeconomic situation has sharply deteriorated. So, economic growth rate averaged around 2.3 percent per year. Moreover, by the end of 2014 the unemployment rate climbed to reach around 12.9 percent[3].

The Egyptian Economy in the Aftermath of January Revolution:

On 11th of February 2011, a transitional government was appointed that ignored the main economic problems. Moreover, it made a number of populist policies in order to control the public and its revolution. Therefore, the transitional government spent more public funds on subsidies and government salaries. Therefore, the fiscal deficit reached around 8.6 percent of gross domestic product (GDP). Consequently, inflation climbed to become two digits to reach 13 percent. Moreover, the external current account deficit climbed to become around $5 billion. In addition, policy makers continued with the same mistake by keeping the value of the Egyptian pound constant against international currencies, especially the US dollar. As a result, the Central Bank of Egypt lost around $20 billion of its international reserves during the era February 2011 and May 2012. Consequently, the tremendous deterioration of international reserves caused the sovereign credit rating of the Egyptian Economy to be downgraded by Moody's Investors Service, Fitch Ratings, and Standard & Poor's.

The Second Transitional Government:

By the end of August 2013, a new Egyptian government took place that achieved some enhancement in the economic situation. The receipt of foreign aid amounted to $12 billion from some Arab Gulf countries has significantly lowered the pressure on the Egyptian balance of payments and exchange rate (Khan and Miller, 2016).

However, in March 2014, this transitional government ended its mission and resigned. Unfortunately, there was no progress with regard to the promised and expected economic recovery. The only positive sign for this government was attracting inflow of funds from the Gulf countries which provided the Egyptian Economy with the budgetary resources that were used in implementing expansionary fiscal policies needed to push economic growth.

[3] The Financial Monthly, the Egyptian Ministry of Finance, January 2015.

Unfortunately, economic recession stayed and GDP growth rate did not exceed 2 percent. Moreover, unemployment rate remained high, and inflation rate stayed at a double-digits number (Khan and Miller, 2016).

Phase 3: 2014 to 2020 The Egyptian Economy under a New Regime:

Starting June 2014, the main economic target was to create around 700,000 job opportunities in order to lower unemployment rate and absorb the new comers into the labour market. Consequently, the Egyptian Economy must achieve continuous economic growth rates amounted around 6 to 7 percent per year to achieve this target (Khan and Miller, 2016).

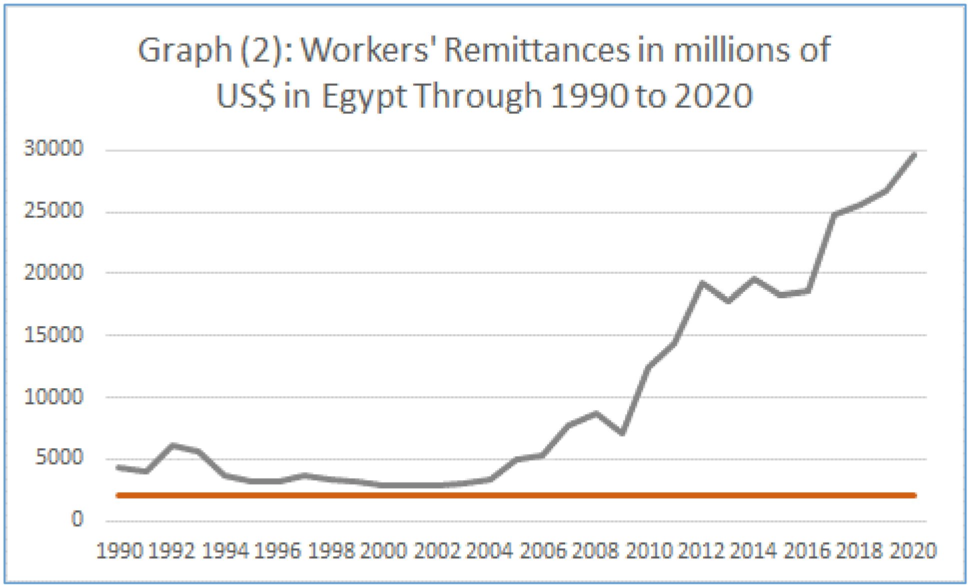
Therefore, reaching to this level of economic growth requires introducing major economic and institutional reforms. As a result, the Egyptian government has implemented a bold economic reform program that included the introduction of the value-added tax (VAT), and reducing energy subsidies in order to decrease the budget deficit as a percentage of GDP. In November 2016, the Central Bank of Egypt devalued the Egyptian Pound to stop the continuous overvaluation of the Egyptian currency that continued to around five years.

Consequently, the macroeconomic indicators have enhanced in the Egyptian economy, especially during 2017 and 2018, because of these economic reforms. On this road, reducing inflation and unemployment rates, boosting economic growth rates, the sharp increase in international reserves to reach around 45 billion US$ were considered the most significant achievements. It is the first time in the history of the international reserves in Egypt to reach to this historical record. This historical achievement of Egyptian international reserves improves the capacity of the central bank to import commodities. In addition, it gave the incentive to foreign investments to inflow widely inside the Egyptian economic sectors.

A tangible improvement has been showed in macroeconomic indicators in the Egyptian economy through the year 2018. For example, economic growth rate improved from 4.2% to 5.3% during the 2017/2018 fiscal year because of the rise in aggregate investments and several improvements in the infrastructure. As a result, unemployment rate decreased from 12% to 9.9%.

Development of the Egyptian Workers' Remittances Through 1990 to 2020:

Remittances from Egyptian workers have been a major contributor to the country's overall foreign exchange earnings and have continued to play a vital role in the balance of payments. The following graph (2) shows the development for these remittances through the period 1990 to 2020 in Egyptian Economy[4];



Source: World Bank Data Base

The Egyptian workers' remittances increased significantly in 1991 and 1992 as a result of the developments in the immediate post-Persian Gulf War period, when the Gulf States decided to receive more Egyptian labor. Remittances decreased at an annual rate of 8% between 1991 and 2000 due to the drop in oil prices, falling from $5.66 billion in 1993 to $2.85 billion in 2000. This resulted in a contraction in the employees' remittance to GDP ratio from 12.1% in 1993 to 2.8% in 2000.

In the aftermath of 11th of September 2001, workers' remittance began to increase in 2003, reaching $2.96 billion, and it reached its highest level ($8.7 billion), or 5.34% of GDP, in 2008.

In 2009, employees' remittances fell to $7.15 billion as a result of the consequences of the world financial crisis. Notwithstanding the political unrest in Egypt in January 2011, which caused economic instability and had an impact on all aspects of economic life, worker remittances rose to $7.9 billion by the end of that year. In 2020, Egyptian employees' remittances climbed sharply to reach $29.6 billion as a result of huge transfers from Egyptian immigrants and workers abroad to

[4] World Bank, Data Base, downloaded from the following link: https://data.worldbank.org/indicator/BX.TRF.PWKR.CD.DT?locations=EG

save their families and relatives living inside Egypt and facing the consequences of the deep economic stagflation. Graph 3 illustrates a gradual improvements in workers ‘remittances as a percentage of GDP since the start of the third millennium. The sources of remittance flows to Egypt clearly reflect the geographic distribution of the stock of Egyptian migrants abroad. Almost 50% of current Egyptian migrants reside in Saudi Arabia, followed by Kuwait, Libya, and Jordan, which together house another 40% of Egyptian exiles.

Source: World Bank Data Base

Literature Review:

A proper knowledge of the relationship between remittances and growth can assist decision-makers in creating an effective economic strategy. According to the literature about the impacts of remittances on economic growth, there are three different sorts of theoretical conclusions. Some theoretical conclusions include the following: remittances have a beneficial impact on economic growth, others explain negative effects on the economy, and the third is integrating the two conflicting theories to discover no effect or a mixed effect. Remittances have emerged as one of the most significant sources of foreign funding in recent years, second only to foreign direct investment (FDI), particularly for a number of developing nations (Giuliano & Ruiz-Arranz, 2009; Adenutsi, 2011; Rao & Hassan, 2011).

Several studies have tried to determine how remittances affect economic growth and poverty reduction. In their study of 99 countries from 1975 to 2003, Aggarwal et al. (2006) discovered that remittances have a favorable impact on bank deposits and the credit to GDP ratio. Using prior research demonstrating the beneficial effects of these two variables on economic growth, the study then investigates the positive effect on economic growth.

Remittances and economic growth are found to be positively correlated by Taylor (1992) and Faini (2001). According to Taylor (1999), every dollar that migrants from Mexico send or bring back to their country raises the GDP of Mexico by anywhere between USD 2.69 and USD 3.17.

Spatafora (2005) discovers that there is no connection between remittances and the development of per capita output. Moreover, Chami et al. (2003) found that remittances have a negative impact on economic growth across a sample of 113 nations in one of the more extensive cross-country studies. The study contends that because remittances deter beneficiaries from working, they have a detrimental effect on economic growth. So, the economic situation in countries that receive remittances is made worse by the low productivity of the remaining labour force.

Remittances are said to contribute to the reduction of poverty because the majority of these funds are utilised to sustain the recipient families' incomes, which are frequently low-income households back home. Remittances therefore aid in bridging the income gap in the nation of origin (Admas, 1989; Barham & Boucher, 1998; and Docquier & Rapoport, 2003). Nevertheless, according to Quartey and Blanson (2004), the amount of remittances coming into Ghana grew throughout the economic shocks, which lessened their negative effects on household wellbeing. Also, certain empirical investigations revealed that the remittances have increased both the investment in real estate as well as the spending power for consumer products (Stahl & Habib, 1989; Glytsos, 1993) and (Durand et al, 1996).

Studies concluded positive impact:

Remittances are spent on lavish consumption rather than the accumulating of productive assets, according to some who say that they do not contribute to economic progress (Rahman et al. 2006). (Stahl and Arnold, 1986).

On the other hand, proponents of remittances who believe they have positive effects on growth emphasise the multiplier effects of consumption (Stahl and Arnold, 1986), the development of financial institutions that handle remittance payments (Aggarwal et al. 2006), the use of remittances as foreign exchange (Ratha 2005), and the use of remittances as a substitute for debt that helps people in nations where microfinance is not (Guilamo and Ruiz-Arranz, 2006).

It should be emphasized that several scholars have reported conflicting findings about the relationship between remittances and economic growth. Remittances have a favorable association with economic growth, according to Glytsos' 2005 analysis. Remittances contribute to growth, but the cost of the growth slowdown caused by them is greater. Remittances can strengthen an economy if it is on the rise, but they can also be detrimental if it is on the decline, according to studies by Jackman et al. (2009) that produced similar findings. As a result, a country's economy shouldn't rely too heavily on remittances for revenue.

There is considerable disagreement over the relationship between remittances and economic expansion in the nations that receive them. In addition, not many research have looked at the relationship between remittances and economic growth in the context of Egyptian economy. This research paper tries to contribute to that gap.

Surveying the empirical studies one can find the study of (Stahl and Arnold, 1986) who contend that because remittances are often spent on personal consumption, they could potentially have a favorable impact on growth. Adams (1998) notes that inward remittances, when workers' remittances increase the productive capacity of the economy which enhance demand and boost output growth. According to (Faini, 2002), the prospects for economic growth and the business climate in the home countries of migrants determine how much influence financial flows have on economic expansion. It makes the case that worker remittances act as a buffer against economic and financial crisis to keep consumption levels stable.

Remittances, according to (Rapoport and Docquier, 2006), could have a favorable effect on investments and the creation of human capital because of the liquidity limitations. Remittances typically have a favourable overall impact on the long-term economic success of the origin countries. In (Ang, 2007), it is demonstrated that there is a positive and significant association between workers' remittances and economic growth in the Philippines, with remittances translating into investments and value-added activities that are more fundamental sources of economic development and progress.

Taparia (2005) declares that the boom in remittances involves an excess of bank liquidity in many countries, like Morocco, a trait that might be seen favorably if the banks use these funds to lend loans to small and medium-sized firms more easily. It is not always the case, though; sometimes banks will choose to purchase Treasury bonds even while they are backing little private businesses. Its influence can more or less be seen depending on the nation's financial progress.

Remittances can be advantageous, according to (Bugamelli and Paterno, 2005), if they lessen the likelihood that foreign investors will abruptly leave developing economies. Additionally, they believe that there is a threshold impact for remittances: if they reach 3% of GDP, they can be viewed as low-cost inflows of foreign currency that provide security to the foreign investors already present in the nation. According to (Sufian, 2009) study, remittances have a beneficial direct and indirect impact on economic growth as a result of interactions with financial and institutional channels.

Remittances also play a significant part in the fight against poverty, as numerous studies such as (Adams, 2004) and (Eken, 2005). Additionally, they discover that remittances are advantageous for economic growth when a portion of the money helps to support the development of "human capital" by covering the costs of youth education and training in these nations.

As a result, it has been observed that remittances in some countries can really help people build up their human capital, which in turn helps the local economy's total factor productivity increase. (Giuilano and Arranz, 2005) note that worker remittances have a favorable effect on economic growth since they make it easier for the poor to access credit and support the growth of the banking sector. Applying panel data on 17 nations in Asia and Pacific during (1993-2003), (Jongwanich, 2007) discovers that remittances have a major effect on reducing poverty. In addition, remittances raises the standard of living for the underprivileged and middle class in their economies.

Studies concluded negative impact:

(Chami et al., 2003) use the World Bank's aggregate panel data for 113 countries through (1970-1998). They examine the factors that contribute to and are affected by worker remittances, and they discover a strong and unfavorable correlation between the rise of remittances and GDP growth. They also come to the conclusion that remittances do not seem to be a substantial source of capital for economic development and that they might rather hinder it due to the so-called "Dutch disease impact" in the economy. Also, 109 developing nations were included in the panel data technique employed by (Emmanuel et al., 2010) during (1990-2003). They discover "Dutch disease" implications of rising remittance levels in these developing nations.

<u>Studies concluded no or mixed impact:</u>

According to several empirical studies, worker remittances either have mixed effects on economic growth or have no effect at all. For example, (Habib and Nourin, 2006) found that worker remittances had a mixed impact on economic growth in some of the East Asian economies. In Thailand, Sri Lanka, India, and Indonesia, they discover a bad correlation between remittances and per-capita GDP growth. Yet, Bangladesh, Pakistan, and the Philippines have positive relationships with it. An OLS using instrumental variables (IV) and fixed effects model is performed by (Adolfo et al., 2009) for a group of 84 recipient nations with annual data through (1970-2004). As a result, they discover that remittances have a negligible impact on the economies of remittance recipients and may even have slowed growth in others. In a research [2005] by the IMF, 101 developing nations were used to analyze this link over a long period of time (1970–2003). Remittances and other factors like education or investment, as well as remittances and per capita production growth, are found to have no statistical relationship. Given the foregoing, we can conclude that, in contrast to FDI and portfolio inflows, the various positive and negative effects of remittances on GDP performance discussed above do not guarantee economic growth.

To sum up, a number of recent studies have begun to focus on the effect of workers' remittances on the economic growth of the receiving country through capital accumulation or other mechanisms. On the one hand, some scholars have established the link between high amounts of remittances and lower poverty and rapid economic growth (Adams and Page 2005; Acosta et al. 2008). Other studies contended that a high level of remittance inflows results in greater investments in human capital, less fluctuation in consumption, and economic stability (Gupta, Patillo and Wagh 2009). Nevertheless other studies have asserted that high levels of remittances may improve the underdeveloped financial system in developing nations by easing lending restrictions, which would have a favorable impact on capital accumulation and economic growth (Woodruff and Zenteno, 2007; Lartey, 2013).

On the other hand, a number of studies have suggested that significant remittance inflows can have negative long-term effects on the recipient nation and result in slower growth rates. Their reasoning is that large amounts of remittances may cause receiving households' labour supply to decline (Amuedo-Dorantes and Pozo, 2006b; Hanson, 2005). As a result, the present paper will investigate the relationship between worker remittances and economic growth in the Egyptian economy based on the literature's most recent discussion and findings.

Methodology and Data:

The present paper tries to investigate the relationship between Workers' Remittances and GDP growth rates in Egypt. Therefore, the study will follow the econometric analysis conducted by Glytsos (2002) and Abou Elseoud (2014). Based on the methodology proposed by Abou Elseoud (2014) that examined the relation between Egyptian Workers' Remittances and the GDP in US dollars as an empirically observed relationship. Therefore, this study will estimate the relationship between these two variables in the long term using the Ordinary Least Squares (OLS) and Augmented Dickey-Fuller methods in order to estimate the model of one dependent variable (Real GDP growth rate Log GDP) and one independent variable (Workers' Remittances' growth rate Log WR). Also, Unit root tests on both variables will be calculated using the Augmented Dickey-Fuller (ADF) and Phillips–Perron tests techniques. Moreover, the present paper employs co-integration, Vector Error Correction Model (VECM) and Engle – Granger test to investigate this relationship accurately.

Table 1. Summary statistics and correlations

	Log GDP	Log WR
Mean	5.59	4.36
Median	5.62	4.32
Maximum	5.71	4.71
Minimum	5.31	4.13
Std. Dev	0.107	0.158
Skewness	−1.284	0.606
Kurtosis	3.845	2.786
Jarque - Bera test for normality	9.443	1.954
Probability	0.00891	0.00376
Obs.	31	31
Log GDP	1.000	
Log WR	0.018*	1.000

- * Denotes significance at a 95% confidence level.

- Variable definition: Log GDP and Log WR are the logarithmic forms of GDP and workers' remittances in Egypt, respectively.
- Source: Authors' calculations using E-views 12.

Table 1 presents the descriptive statistics as well as the correlation matrix of the data used in the study after logarithmic transformations. As can be seen in Table 1, the measures of the probabilities of Jarque–Bera test for normality which shows that the two variables do not follow a normal distribution. In addition, looking at the coefficient matrix, a strong positive and statistically significant relationship between these two variables can easily be found.

The motive for this work is clear and straightforward: if there is a positive relationship between these two variables in Egypt, it will provide information on how to increase GDP growth through increasing workers' remittances[5]. Consequently, the study will use annual data through the period 1990 – 2020 collected from the World Bank data base. The data is in constant 2017 US Dollar basis[6]. Following Glytsos (2002) and Abou Elseoud (2014), the study calculated the logarithm for both variables to be used in the econometric analysis. Therefore, (Log GDP) was taken for the Real GDP and (Log WR) was taken for the Workers' Remittances for the whole time series.

The first step in this econometric analysis is to conduct the Augmented Dickey-Fuller (ADF) and Phillips–Perron tests techniques for the group of variables in this study in order to reach to stability and determine the level of integration among these variables.

(ADF) Unit Root Test

The order of integration for a non-stationary time series is examined in this work using the Augmented Dickey-Fuller (ADF) test described in Dickey and Fuller (1979 and 1981). The following equation (1) describes how to perform the ADF test;

$$\Delta Y_t = \Phi . Y_{t-1} + {}^{k}\Sigma_{i=1} \Phi_i . \Delta Y_{t-i} + \varepsilon_t \qquad (1)$$

Where k is the amount of lags for Yt-i that must be in a level to preserve degrees of freedom and permit the presence of autocorrelation in ε t.

The autoregressive coefficient (α 0) , meanwhile, can be represented through;

$$Y_t = \alpha_0 Y_{t-1} + \varepsilon_t$$

And so it can be adjusted to;

[5] Data for Workers' Remittances in constant 2017 US Dollar is downloaded from the following link : https://data.worldbank.org/indicator/BX.TRF.PWKR.CD?locations=EG

[6] Data for GDP in constant 2017 US Dollar is downloaded from the following link : https://data.worldbank.org/indicator/NY.GDP.MKTP.KD?locations=EG

$$\Delta Yt = (\alpha_0 - 1) Y_{t-1} + \varepsilon_t$$

Yt is integrated of order 0 if α 0 is smaller than 1. If not, the further test needs to be carried out;

$$\Delta\Delta Yt = (\alpha_t - 1) \Delta Y_{t-1} + \varepsilon_t$$

Yt is integrated of order one if α 1 is smaller than 1. As a result, this process is carried out repeatedly until stationarity.

The current study demonstrates that there is evidence of a unit root in the two variables using E-views 12. ADF test demonstrates that the two variables are non-stationary as a result. Table 2 clarifies results for ADF tests where logarithm of real GDP is (LRGDP), and logarithm of Worker Remittances is (LWR).

Table 2. Augmented Dickey-Fuller (ADF) unit root tests results.

ADF (With trend)	LRGDP	LWR
In Levels	-2.61	-2.13
In First Differences	-3.86**	-5.42**
Critical Values 5% level	-3.57	-3.57
Integration Level	I(1)	I(1)

** Significant at 5% level
Source: Author's estimations using E-views 12 with the same data.

The two model variables, LRGDP and LWR, are obviously integrated of order one (1). In light of this unit root test's demonstration that the two variables are discovered to be of the same order of integration, the paper is sufficiently justified to examine the co-integration test to this model to discover their relationships. In addition, the paper conducts Phillips-Perron (PP) Unit Root Tests to support these findings.

Phillips-Perron (PP) Unit Root Tests

It is crucial to note that the treatment of heteroskedasticity and serial correlation in errors between the Phillips-Perron (PP) unit root tests and the ADF tests appears to be the primary distinction between them. The key benefit of PP tests over ADF tests is that they are more resistant to common types of heteroskedasticity in the error term. Moreover, the PP test regression does not require a lag period to be specified. Regression from the PP test can so take this shape;

$$\Delta Yt = \beta_0 . Dt + \Phi i . Y_{t-i} + \varepsilon_t \qquad (2)$$

ε t is I(0) and could be heteroskedastic in this case. The asymptotic distributions of the PP and ADF tests are identical under the null hypothesis that Φi = 0. the PP and ADF tests have the same asymptotic distributions. The article discovered that using E-views 12, PP tests produce the same results as ADF testing. Table 3 represents results for PP tests for the model.

Table 3. Phillips-Perron (PP) unit root tests.

PP (With trend)	LRGDP	LWR
In Levels	-1.35	-2.11
In First Differences	-3.85**	-5.42**
Critical Values 5% level	-3.57	-3.57
Integration Level	I(1)	I(1)

** Significant at 5% level
Source: Author's estimations using E-views 12 with the same data.

Table 3 makes it clear that PP unit root tests guarantee the outcomes of ADF testing. The integration of the two variables is determined to be of order one I(1). The validity of assessing co-integration relationships for this system of variables is established by the light of these findings. There are static long-run equations of order two that are integrated, and it is anticipated that co-integration relationships will be found between the two variables. This indicates that the variables are co-integrated in all bivariate equations. As a result, the findings in Abou Elseoud (2014) indicate that these variables have a long-term association.

Co-integration Test Results

Therefore, the second step is to examine co-integration relationships between the two variables. In case of a bivariate co-integration test, it is highly recommended to use Engle and Granger two steps test (Engle and Granger, 1987). Two hypotheses are tested using this method. the alternative stating co-integration to the null hypothesis of no co-integration. The greatest eigenvalue, the trace statistics, and two likelihood ratio statistics relating to the quantity of co-integration vectors are the results of the test. Additionally, this framework investigates if the GDP growth rate and worker remittances in Egypt have any long-term links.

Estimations in the Long Run

The following Table 4, clarifies that there exists an equilibrium relationship between GDP growth rate and worker remittances in Egypt in the long-run. It is found that the null hypothesis R = 0 is rejected which means the existence of long-run relationship between these two variables in Egypt.

Table 4. Results for Co-integration Test (Engle – Granger) between LGDP and LWR

Engle – Granger z-statistic	Value	Probability
-14.738	35.126*	0.0929*

* Long-run Engle - Granger test with one co-integration equation and at 10% level of significance.
Source: Author's estimations with the same data series.

The long-run relationship between these two variables can be illustrated through the following equation (3);

$$\mathbf{LGDP = 5.51 + 0.018\,LWR} \quad \mathbf{(3)}$$

(-2.97) (-1.58)

It presents that GDP growth rate (LGDP) is positively affected by changes in worker remittances growth rate (LWR). This long-run equation shows that a 1 percent increase worker remittances growth rate leads to 0.018 percent increase in GDP growth rate in the Egyptian economy; This coefficient is significant; R-square and R-square adjusted are 0.54 and 0.48 respectively.

To illustrate the short-run interactions for this model, the Vector Error Correction Model (VECM) is used to derive the short-run model from the long-run one. This makes it possible for the present paper to discuss how the GDP growth rate responds to changes (or shocks) in the growth rate of worker remittances in the Egyptian economy. Table 5 presents VECM estimates as follows;

Estimating the Relationship in the Short Run

Table 5. VECM estimates between LGDP and LWR.

	LGDP	LWR
Error correction co-integration equation	1	0.1377 (0.127)*
ΔLWR(-2)	0.128 (0.146)	0.130 (0.173)
ΔLGDP (-2)	0.40 (0.399)	0.97 (0.472)
C	0.0129 (0.0169)	
R-square	0.44	
Adj. R-square	0.40	
F-statistic	0.939	0.994
Akaike Information Criteria	-2.459	-2.125

* t-values in parentheses.
Source: Author's estimations with the same data series.

For short-run, table 5 illustrates that a one percent rise in WR growth rate increases GDP growth rate by around 0.1377 percent. In addition, the error correction coefficient is positive and significant = 0.013 which means that 1.3% of the deviations from the long-run equilibrium will be continued in the following years. It is an indication to a so slow adjustment that can be attributed to the deep recession that the Egyptian economy has faced since 2011. These results assure the long-run analysis.

OLS Estimation for the Model

The fourth and the final step is to calculate the Ordinary Least Squares (OLS) estimates where GDP Growth Rate is the dependent variable and Workers' Remittances is the independent variables. The following table represents the results for OLS estimation;

Table 6. OLS estimates between LGDP and LWR.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLWR	**0.028**	0.133731	0.210328	**0.0435**
C	**-0.010**	0.011115	-0.875533	**0.0388**

R-squared	**0.901842**	Mean dependent var	0.846199
Adjusted R-squared	**0.894035**	S.D. dependent var	6.345868
S.E. of regression	5.070260	Akaike info criterion	5.677646
Sum squared resid	4689.902	Schwarz criterion	5.955512
Log likelihood	-325.0452	Hannan-Quinn criter.	7.129270
F-statistic	4.587655	Durbin-Watson stat	0.476387
Prob(F-statistic)	0.034008		

The findings in table 6 show that the variables have a static long-run relationship. Indicating the positive correlation between the GDP Growth Rate and the Workers' Remittances in the Egyptian Economy, the coefficient of the independent variable is positive (equal to 0.028). Hence, as aggregate demand rises and the value of the expenditure multiplier increases, the remittances of workers have a considerable and direct impact on GDP growth.

Regression analysis shows that a one percent rise in worker remittances growth rate will result in a 0.028 percent increase in Egypt's real GDP growth rate. As a result, worker remittances provide a major contribution (as a source of yearly income) to raising the degree of economic well-being for Egyptian individuals and families. On the other hand, economic growth is a key factor in determining the flow of remittances, with remittances rising when economic activity in the recipient country picks up and falling when things get worse.

The probability values for these coefficients are all less than 0.05 in the final column, and the corresponding R-squared and Adjusted R-squared values are 0.90 and 0.89, respectively, indicating a highly significant long-run positive link between these two variables.

Conclusion:

To sum, the present paper finds that Egypt's economic growth rate over 1990 until 2020 is significantly positively impacted by the Egyptian Workers' Remittances during this period of time.

Of course, this result is applicable with both economic theory and practical practices. For the expansion of Workers' Remittances; private consumption increases. Therefore, it follows the Keynesian theory where expansionary effective demand through the increase in household spending has its positive effect on economic growth through the multiplier effect. The paper finds that, during the period 1990 until 2020, there exists a static short run and long run positive relationship between Workers' Remittances (as an independent variable) and GDP growth rate (as a dependent variable).

In the long-run, the present paper estimates that one percent increase in Workers' Remittances' growth rate causes GDP growth rate to increase by around 0.018 per cent (as expressed in table 4 for the estimates in the long-run). The relationship can be expressed in the long run by the following equation;

GDP Growth Rate = 5.51 + 0.018 Workers' Remittances Growth Rate + Error Term

In the short-run, the paper finds that an increase in Workers' Remittances by one per cent causes an increase in GDP growth rate by 0.14% in the following year (as illustrated in table 5 for the estimates in the short-run).

Policy Recommendations:

Finally, it is better to the Egyptian government to;

- Facilitate the emigration of Egyptian labor force and,
- Attract the workers' remittances transfer to the Egyptian Economy in order to,

- Use these remittances' transfers to boost economic growth and,
- Employ these workers' remittances to expand Small and Medium Enterprises (SMEs) to become the main employer for the labor force in Egypt, especially for the poor and middle class to improve their standards of livings,
- Give incentives to the Egyptians working abroad to transfer their remittances through official financial channels in order to promote international reserves in the Central Bank of Egypt.

References

1. Abou Elseoud, M., (2014) Do Workers' Remittances Matter for the Egyptian Economy? International Journal of Applied Operational Research, Vol. 4, No. 1, 1-26, Winter 2014.
2. Amuado-Dorantes, C., and Pozo, S., (2005). On the Use of Differing Money Transmission Methods by Mexican Immigrants. The International Migration Review. 39(3).
3. Bourdet, Y., and Falck, H. (2006), Emigrants' remittances and Dutch Disease in Cape Verde, International Economic Journal, 20(3).
4. Bryan, R., (2004). Remittances in Armenia: Size, Impacts and Measures to Enhance their Contribution to Development. USAID/Armenia, October 1.
5. Bugamelli, M., Paterno, F., (2005). Do Workers' Remittances Reduce the Probability of Current Account Reversals? World Bank Policy Research Working Paper (3766).
6. Chami, R., Barajas, A., Cosimano, T., Fullenkamp, C., Gapen, M. and Montiel, P., (2008). Macroeconomic Consequences of Remittances. IMF Occasional Paper (259), Washington DC.
7. Chimhowu A., Pinder C., Piesse J., (2003). Assessing the impact of Migrant Workers' Remittances on Poverty. Presented at New Direction in Impact Assessment for Development Methods and Practices. IDPM, University of Manchester, Kings College, London. Institute for Development Policy and Management. Wise Development LTD 24 – 25 November.
8. Dickey, D., Fuller, W., (1979). Distribution of the Estimators for Autoregressive Time Series with a Unit Root. Journal of the American Statistical Association. (74).
9. Dickey, D. A. and W. A. Fuller, Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root. Econometrica, 1981. 49 (4), 1057-1072.

10. Dickey, D. A., Jansen, D. W. and D. L. Thornton, A Primer on Co-integration with an Application to Money and Income. Federal Reserve Bank of St. Louis Review, 1991. 73 (2), 58-78.
11. Engle, R. F., Granger, C. W., (1987). Cointegration and Error Correction: Representation. Estimation and Testing. Econometrica. 55(2).
12. Glytsos, N.P., (2005).The Contribution of Remittances to Growth. A Dynamic Approach and Empirical Analysis. Journal of Economic Studies. 32(6).
13. Granger, C. W. J., Some recent developments in a concept of causality. Journal of Econometrics, 1988. vol. 39, pp. 199–211.
14. Hamilton, J. D. (1994). Time series analysis. Princeton University Press: Princeton, New Jersey.
15. Kamaly, A. (2006). Economic Growth Before and After Reform: The Case of Egypt, 1973-2002. International Journal of Applied Econometrics and Quantitative Studies, 3(2), 21-54.
16. Khan, M., & Miller, E. (2016). The Economic Decline of Egypt after the 2011 Uprising. Retrieved from http://www.jstor.org/stable/resrep03663.
17. Kheir-El-Din, H., & Moursi, T. A. (2006). Chapter 7 Sources of Economic Growth and Technical Progress in Egypt: An Aggregate Perspective. In J. B. Nugent & M. H. Pesaran (Eds.), Contributions to Economic Analysis (Vol. 278, pp. 197-236): Elsevier.
18. Mankiw, N. G., Romer, D., & Weil, D. N. (1992). A Contribution to the Empirics of Economic Growth*. The Quarterly Journal of Economics, 107(2), 407-437.
19. Phillips, P. C. B. & P. Perron. (1988) Testing for a unit root in time series regression, Biometrika, 75, 335- 346.
20. Ratha, D., (2006). Trends, Determinants and Macroeconomic Effects of Remittance. In Global Economics Prospects 2006: Economic Implications of Remittances and Migration, World Bank, Washington, D.C.
21. Senhadji, A. (2000). Sources of Economic Growth: An Extensive Growth Accounting Exercise. IMF Staff Papers, 47(1), 129-157.
22. World Bank, (2006). Global Economics Prospects: Economic Implications of Remittances and Migration 2006. Washington, D.C.

Reports, Database, and Websites:

- Egyptian Central Agency for Public Mobilization and Statistics (CAPMAS), Statistical Yearbook 2020, Labor Division: https://www.capmas.gov.eg/Pages/StaticPages.aspx?page_id=5034.
- Egyptian Ministry of Finance: https://mof.gov.eg/en
- Egyptian National Accounts data: https://mped.gov.eg/Analytics?lang=en
- World Bank, World Development Indicators: https://data.worldbank.org/indicator/

Analyzing Economic Pricing for Natural Gas and Petroleum Products in Egypt

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Received: October 17, 2020 Accepted: November 30, 2020 Online Published: December 25, 2020

Abstract

This study discusses the two most famous methods to analyse the pricing process for petroleum products in Egypt. The study clarifies that using unreal prices for these products for more than 50 years caused depletion of these vital economic resources. The study chooses to apply Tehran method of pricing natural resources. Since 2015, the Egyptian government started initiating a program to liberalize the prices of petroleum products and Natural Gas to get rid of the heavy burden of subsidizing these products.

As a result, the main target for this study was to determine the price level that the Egyptian government should stop liberalizing at. Finally, the study determined the real prices as follows; LPG = 11111.2 per Metric Ton, Kerosene = 12418 per Metric Ton, Gas Oil = 11369 per Metric Ton, Fuel Oil = 5874 per Metric Ton, and Gasoline = 13072 per Metric Ton.

Introduction:

During the last three years, the Egyptian government has initiated an economic reform program that concentrated on liberalizing all prices. With the help from IMF experts, the Egyptian government has liberalized the exchange market and energy products in order to lower the burdens on both the budget and the Balance of Payments. On this road, it is important to determine the economic prices for these energy products to know the limit for this liberalization program.

Consequently, a clear strategy to remove energy subsidies in Egypt is needed. The starting point of this strategy is the setting of target levels for energy prices.

Consumers buy energy products in different forms. Primary energy sources like natural gas are typically converted in-house to heat, oil is converted to driving power in cars, while secondary energy carriers, such as electricity, are used for services like lighting, heating (e.g., conversion through heat pumps). This paper aims to estimate the economic prices for oil products (gasoline, diesel and heating oil), natural gas. Therefore, the paper will discuss the pricing principles of these products

The prices of energy products (such as oil and natural gas) are determined by supply and demand powers in the markets. Elements that affect the supply are the cost of extraction and transport costs, limited resource stocks and cartels. On the other hand, elements that affect demand are economic growth and the availability of substitutes. Expectations towards future developments on both sides (demand and supply) also play their role in setting the equilibrium (for example prospects on new undiscovered reserves, political stability, speculation, etc.). Transport costs will determine whether there will be strong price differences between regional markets or not. This study is a trial to determine the economic prices for Natural Gas and Petroleum Products in the Egyptian Economy in order to propose a gradual program to liberalize the prices of these products in Egypt across five years.

It is clear that removing energy subsidies would reduce the Egyptian budget deficit burden and generate significant government savings that could be used to fund other priorities, including more targeted assistance to the poor. Removing energy subsidies would also reduce energy overconsumption and encourage energy saving, make use of energy more efficient, and enhance energy security in the Egyptian Economy. Finally, energy prices reform would provide correct pricing signals to producers, consumers and investors. Therefore, this reform will create the preconditions needed for a more competitive economy over the longer term, while resulting in a reduction of environmental pollution.

The paper aims to determine the economic prices for Natural Gas and Petroleum Products in Egypt now in order to give recommendations for the Egyptian government with regard to liberalizing these products prices. Therefore, the main objective of this study is to develop an energy pricing strategy for Egypt that creates pricing targets towards the prices of Natural Gas and Oil products levels that are based on the underlying economic costs for each product.

The paper is targeting to ask important questions related to determine the economic prices of these products such as; what is the optimal methodology to determine the economic prices for these products?, What are economic prices for these products in Egypt now?, What are the main recommendations for the Egyptian policy makers with regard to economic prices for Natural Gas and Petroleum Products?

Literature Review:

With regard to the literature of this topic, it is found Isfahani (1996) investigated government subsidies and the demand for petroleum products in Iran. The results suggest that price elasticities of demand are larger than previously thought. The results also indicate that price increases can control the over-consumption of these products in the Iranian Economy.

In another paper which is Onwioduokit and Adenuga (2001) examined the demand for petroleum products in Nigeria from the period of 1970-1996. The paper concluded that gas and petrol consumption are elastic in the urban areas. Therefore, as agricultural contribution to national income increases, consumption of oil products decreases, while the contribution of the manufacturing sector to income is positive elastic. However, the study did not provide any estimations for the prices of Natural Gas and oil products.

Also, there is (Rentizelas et. Al, 2013) that developed a linear programming model that included inventory analysis and based on “Cradle to Gravel Basis”. The model included all of the processing, foundation, operation and decommissioning of each technology. In addition, an estimation of emissions to the environment was considered. The model was applied for the case of Greece for the period of 2012-2050 to reach a decision that minimizes the cost of the power generation. The results of that work showed that external costs of various technologies have a large contribution at the total costs.

For this literature in case of Egypt, (Khorshid, 2009) is found to be an important trial to estimate the economic prices of energy products in the Egyptian economy. This research paper developed an energy economy wide interaction model based on the Egyptian social accounting matrix for the fiscal year 2006/2007. This model follows the general equilibrium tradition with detailed energy sector (including crude oil, natural gas, gasoline, fuel oil, gas oil, LPG, other products and electricity). The model was developed to test alternative domestic energy pricing strategies, production policies of crude oil and natural gas, investment spending patterns, government expenditure policies as well as the impact of these policies on the performance of the Egyptian economy as a whole. The model was used to assess the economy wide impact of alternative medium term scenarios through the period (2006/2006 – 2011-2012) associated with domestic energy pricing and subsidy policies. Three energy pricing scenarios are tested using the issue-oriented economy wide model. The first scenario assumes the continuation of the currently adopted energy pricing and subsidy policies. The two other scenarios assess the economic impact of two pricing program, based on the actual cash cost pricing principle with 5 and 10 years application periods.

Also for Egypt, the most important paper in this literature and the nearest one to this study is the (World Bank, 2009) study that provided an energy pricing strategy for the Egyptian government to liberalize the prices of energy sector. This study estimated the prices for Natural Gas and Oil products in Egypt using the cost-reflective prices methodology.

The cost of supply across the value chain of electricity and natural gas was determined by assessing both current demand and cost levels, and the additional capital and operating costs that would be incurred in the future to meet growing customer demand. Subsequently, costs were aggregated and used to derive cost-reflective prices per customer category and sub-sector. The financial viability of each sub-sector was then verified using demand, price, and operating and capital cost data.

For international papers, there is (Passey et al., 2017) that used the methodology of cost reflective in order to price electricity. The study applied this methodology to a typical demand charge network tariff proposal within the Australian National Electricity Market and actual consumption data of 3876 households in Sydney at Australia. The analysis found it to have low cost-reflectivity for clients' bills with during the periods of network peak demand.

Methodology:

This paper uses the hypothesis "Cost Reflective Method" in order to estimate the economic prices for Natural Gas and Oil products in Egypt in 2019.

Following (World Bank, 2009), this study will use the same methodology in determining the economic prices for Natural Gas and Petroleum Products. This methodology was used also in (Khorshid, 2009) to calculate these prices in Egypt. This study will update these calculations. Data needed for this research will be collected from Ministry of Finance and Ministry of Petroleum.

The cost reflective methodology essentially entails, firstly, the determination of a "revenue requirement" that ensures the recovery of all underlying costs i.e. fixed and variable operating costs, depreciation and a return on assets, with the latter being derived by multiplying the value of the asset base with the relevant weighted average cost of capital (WACC). The WACC used for all natural gas and oil products activities (i.e. oil generation, transmission and distribution, and natural gas transportation and distribution) was 8 per cent real, pre-tax. Average cost-reflective prices will be calculated for each oil product.

Development of Real Prices of Petroleum Products and Natural Gas:

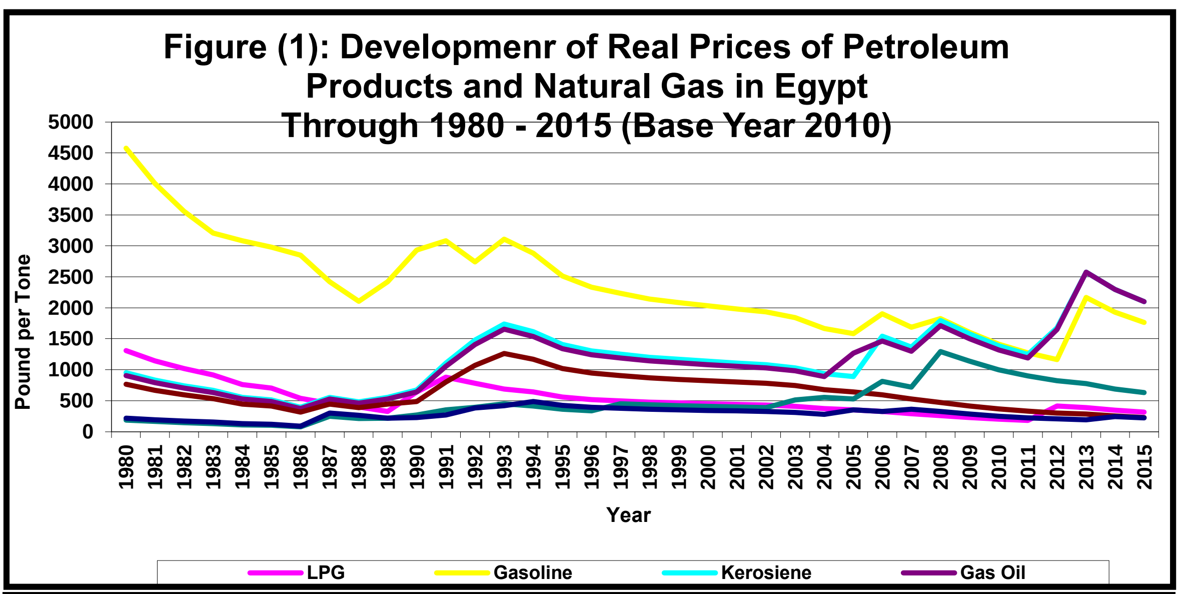

Figure 1 shows that the real prices of all products declined during the period from 1980 to 1987. The government started to move the prices of all products during that period following the severe economic crisis that hit the Egyptian economy at the end of the 1980s. The Egyptian economy entered a period of economic reform, which was implemented by the Egyptian government in coordination with the International Monetary Fund and the World Bank in the beginning of the nineties. The real prices witnessed a big leap at that time, and then the real prices continued to decline until mid-2006 in which the price of gasoline with excellent quality, diesel and kerosene was moved, as shown in figure (1).

The study concludes from this analysis that most of the products studied receive considerable subsides, which led to a decline in their real prices for 2019 compared with their levels in 1979, despite the high levels of nominal prices of all these products during the period under study.

Discussing Different Methods Available for Pricing Petroleum Products and Natural Gas:

The economic feasibility of the use of generally scarce resources is determined by identifying the opportunity cost of the current use of that depleted resource. Hence, the present value of possible exploitation of petroleum products and natural gas in the future must be identified. There are two ways to determine the fair price of crude oil or natural gas:

1 - Method Hoteling:

The well-known economist “Hotelling” formulated a condition known as the **Hotelling condition** to maximize the community's potential use of the depleted resource. This condition stipulates that the price of the depleted resource must be increased annually by the rate of the social interest rate until the product is balanced. If the price of the resource is expected to increase at a rate higher than the social interest rate, the depletion of the depleted resource must be delayed. If the expectation is that the price of the depleted resource will increase at a rate lower than the interest rate, it will be necessary to increase current production rates so as to maximize the potential use of the resource. Hotelling equation is on the form;

$$(1) \ldots\ldots\ldots\ldots\ldots \quad Pt = P_0\, e^{r\,a\,t}$$

Where:

1. r is the social interest rate.

2. a, which is the coefficient to be added to the social interest rate, where 1 => a => 0, which expresses the other factors involved in determining the discount rate on which to base the present value of the return of the crude oil and natural gas unit to be sold in the future.

3. P is the social price of the unit of crude oil and natural gas at present.

4. Pt is the social price of the unit of crude oil and natural gas in the future.

To apply this requirement to crude oil and natural gas, the following shall be specified:

First: Social Interest Rate r:

The social interest rate is the cost of using capital from a social point of view and is determined by the interaction of two factors: the marginal rate of return on investment and the consumer interest rate.

The consumer interest rate reflects the marginal cost that society will sustain by postponing some consumption from one year to the next. The price depends on two factors:

• The first is the net rate of time preference and review of the preference of individuals for present consumption on future consumption.

• Second: the rate of change in the marginal utility of consumption.

The interest rate can then be calculated using the following formula:

Consumer interest rate = Time preference rate + (average individual consumption growth rate X elasticity of marginal income assessment) .... (2)

The average consumption rate is calculated from the Social Accounting Matrix (SNA). The rate of time preference and the elasticity of marginal income assessment can be estimated from the study of past government behaviour and the choices made by its stated policy. The social interest rate is then calculated using the equation:

$$ARI = s \,.\, R + (1 - s) \,.\, CRI \qquad .... (3)$$

Where:

ARI Social Interest Rate

R Internal Rate of Return

S Ratio of investment expenditure to total expenditure

(1 - s) Ratio of consumer spending to total expenditure

CRI Interest Rate

Equation (3) shows that the social interest rate is a weighted average for both the internal rate of return (on investment) and the consumer interest rate, so that the ratio of investment spending and consumer spending to total expenditure is used as a weighted sum.

This price is used as a discount rate to calculate the current social value of the future earnings of the community. The greater the government's assessment of the consumption of current generations and reduced the assessment of what the future generations will receive the social interest rate rose, and vice versa.

<u>Second: Parameter a:</u>

Factor A is determined by other factors that affect the decision to produce the depleted resource other than future price expectations and interest rates. These factors are due to uncertainty, political factors and various external damage. Thus, the discount rate in this case is r + a instead of r.

<u>Third: Predicting the social price of the unit of crude oil and natural gas in the future Pt:</u>

The study assumes that the social value of crude oil and natural gas is the price of its future export, ie, the world price in the future.

<u>2. Method of the Tehran Convention 1971:</u>

The OPEC agreement between OPEC and international oil companies in early 1971 approved an annual rate of increase of 5% at an appropriate rate to preserve the true value of those resources. This annual rate of increase was determined by three factors: the rate of inflation, the annual growth rate of oil demand and changes in the value of the dollar against major currencies. Abdullah (2005) proposes to take the price of a barrel of crude oil for 1987, which is $ 18 as the basis for pricing, where there was a time of consensus that the price is acceptable and fair from different sides of the market.

Since the determination of free prices for petroleum products and natural gas is outside the scope of the study, to obtain these prices, the study will use the estimates of the study (2009 Khorshid) prices of petroleum products and natural gas. Using the previous theoretical method, the study reached a free price of crude oil of $ 100.6 per barrel.

The study also estimated the statistical relations between the prices of crude oil and the prices of refined petroleum products. The linear regression method was used to estimate the parameters of these ratios and using time series for the period from January 2003 to December 2007. The regression analysis showed high significance of the ratios by not less than 95%) and reached 98% (in the case of diesel).

The following table shows the parameter values resulting from the regression analysis of various petroleum products:

Table 1: the Parameter Values of Various Petroleum Products

Price Equation	Product
PLPG = 9.229 Pc	LPG
PKerosene = 10.314 Pc	Kerosene
PGasoil = 9.446 Pc	Gas Oil
PFO = 4.878 Pc	Fuel Oil
PGasoline = 10.858 Pc	Gasoline

Source: Khorshid M. (2009) **"Revising Energy Pricing Strategy for Egypt – An Issue Oriented Economy-wide Analytical Approach”** 8th International Conference of the Middle East Association (MEEA), Monaco, France, March.

Where Pc is the price of crude oil per barrel in US dollars.

In order to arrive at the final price estimates reflecting the actual cost of these products, the costs of distribution, storage, delivery, transport and taxes have to be added.

According to table 1 and the global Oil prices that reached to US 70$ per barrel in May 2019, the study can estimate the economic pricing for these products to be as follows;

Table 2: the Parameter Values of Various Petroleum Products According to Tehran Treaty In US Dollar per Metric Ton

Price Equation In $ US	Product
PLPG = 646	LPG
PKerosene = 722	Kerosene
PGasoil = 661	Gas Oil
PFO = 341.5	Fuel Oil
PGasoline = 760	Gasoline

These prices, represented in table 2 are in dollar per metric ton. Therefore, these prices have to be converted to Egyptian Pounds due to the transformation calculation. The new prices can be presented in the following table.

Table 3: the Parameter Values of Various Petroleum Products According to Tehran Treaty In Egyptian Pound per Metric Ton

Price Equation In LE	Product
PLPG = 11111.2	LPG
PKerosene = 12418	Kerosene
PGasoil = 11369	Gas Oil

PFO = 5874	Fuel Oil
PGasoline = 13072	Gasoline

Conclusion:

This study tries to estimate the economic price for petroleum products and natural gas in Egypt. The study described the development of real prices for these products which showed that most of the products studied receive considerable subsides, which led to a decline in their real prices for 2019 compared with their levels in 1979, despite the high levels of nominal prices of all these products during the period under study.

Two methodologies of pricing to natural resources were discussed; Hotelling method and Tehran method. The study chooses to apply Tehran method since it is more simple and straightforward, and related to the international Oil prices.

Therefore, the resulting prices are as follows; LPG = 11111.2 per Metric Ton, Kerosene = 12418 per Metric Ton, Gas Oil = 11369 per Metric Ton, Fuel Oil = 5874 per Metric Ton, and Gasoline = 13072 per Metric Ton.

References

1. International Energy Agency, 2010, “Energy Policies of IEA Countries: Turkey 2009 Review” (Paris).
2. ———, 2011a, “Development in Energy Subsidies,” in the World Energy Outlook (Paris).
3. ———, 2011b, “Fossil- Fuel Subsidies— Methodology and Assumptions,” World Energy Outlook. Available via the Internet: http:// www .iea .org /publications /worldenergyoutlook/ resources /energysubsidies /methodologyforcalculatingsubsidies.
4. ———, 2011c, World Energy Outlook (Paris). International Finance Corporation, 2012, From Gap to Opportunity: Business Models for Scaling up Energy Access (Washington).
5. International Monetary Fund, 2008, “Food and Fuel Prices— Recent Developments, Macroeconomic Impact, and Policy Responses” (Washington). Available via the Internet: http:// www .imf .org /external/np /pp /eng /2008 /063008 .pdf
6. Kennedy, David. (2003) "**Power Sector Regulatory Reform in Transition Economies: Progress and Lessons Learned**" European Bank for Reconstruction and Development, WP No. 78.

7. Kerkelä, Leena. (2004) "**Distortion Costs and Effects of Price Liberalization in Russian Energy Markets**" Bank of Finland, Institute for Economies in Transition, BOFIT Discussion papers, N 2/2004, June.

8. Khorshid M. (2009) **"Revising Energy Pricing Strategy for Egypt – An Issue Oriented Economy-wide Analytical Approach"** 8th International Conference of the Middle East Association (MEEA), Monaco, France, March.

9. Khorshid M. (2009) "**An Energy Economy Interaction Model For Egypt**" International Conference on Policy Modeling, Ottawa, Canada, June.

10. Mabro, Robert. (2006) "**Egypt's Oil and Gas: Some Crucial Issues**" The Egyptian Center for Economic Studies, Lecture Series No. 25, September.

11. Maghyereh, Aktham. (2004) "**Oil Price Shocks and Emerging Stock Markets: A Generalized VAR Approach**" *International Journal of Applied Econometrics and Quantitative Studies*, Vol. 1-2.

12. Naka, A. and Tufte, D. (1997) "**Examining Impulse Response Functions in Cointegrated Systems**" *Applied Economics*, 29, 1593-1603.

13. Passey, R., Haghdadi, N., Bruce, A., MacGill, I., 2017. Designing more cost reflective electricity network tariffs with demand charges. Energy Policy 109, 642–649. https://www.researchgate.net/publication/318771310_Designing_more_cost_reflective_electricity_network_tariffs_with_demand_charges

14. Pindyck, R. S. (1999) "**The Long Run Evolution of Energy Prices**" *Energy Journal*, 20(2), p 1-27.

15. Salehi-Isfahani, D. (1996) "**Government Subsidies and Demand for Petroleum Products in Iran**", Oxford Institute for Energy Studies, WPM 22.

16. Stenner, K., Fredericks, E., Hobman, E.V. and Meikle, S., 2015, 'Australian Consumers' Likely Response to Cost-Reflective Electricity Pricing', CSIRO Energy Flagship, June, 2015.

17. Vagliasindi, Maria, 2013, "Implementing Energy Subsidy Reforms: Evidence from Developing Countries" (Washington: World Bank). Available via the Internet: https:// openknowledge.worldbank .org /handle /10986 /11965.

18. Velody, Mark, Michael J. G. Cain, and Michael Philips, 2003, "Energy Reform and Social Protection in Armenia," in a Regional Review of Social Safety Net Approaches: In Support of Energy Sector Reform (Washington: United States Agency for International Development).

Public policy challenges in achieving sustainable development in Egypt

Application to the civil society sector

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Received: October 2, 2020 Accepted: November 13, 2020 Online Published: December 30, 2020

Abstract

Civil society organizations are one of the main partner pillars for achieving sustainable development in coordination and cooperation with responsible partners, which are the government and the private sector. Within the framework of the Sustainable Development Goals 2020 launched by the United Nations, civil society is a major partner in developing, implementing and evaluating sustainable development plans and organizing community participation in preserving resources. And its sustainability. Civil society is also a tool for communication between citizens and decision-makers, ensuring a real community dialogue with citizens at the local level to achieve building awareness and conviction to implement sustainable development programs. Public policies are the main guide in directing the role of civil society towards participation in the public work system, and civil society faces multiple challenges to play its role in development processes. The research addresses the position of civil society in the theoretical and practical framework, the challenges it faces, and the necessary role to contribute effectively to sustainable development.

Keywords: Civil society, Egypt, public policies, Sustainable Development Goals 2020.

Introduction

Civil society is any non-governmental, independent, voluntary, non-profit organization, including civil associations and other various names, all of which must target comprehensive and sustainable development. What is meant in this document is civil associations, and it constitutes one of the main partner pillars for achieving sustainable development in coordination and cooperation with the responsibility partners, which are the government and the private sector. And within the framework of the Sustainable Development Goals 2020 launched by the United Nations, civil society is a major partner in developing, implementing and evaluating sustainable development plans and organizing community participation in preserving and sustaining resources. The local level to achieve building awareness and conviction for the implementation of sustainable development programs.

Development is a human right endorsed by international conventions and conventions under an institutional partnership that brings together the state, civil society and the private sector, and within the framework of legislation and a system that achieves social justice and economic growth within a framework of societal cultural values and principles, by promoting national development programs on which the visions of all institutions are unified. Civil society that works in the field of public work with all segments of the people, instead of working in isolated islands, based on points of distinction and strength for each of them, provided that these national programs are centralized and based on the participation of the local community and have a clear vision for ways to implement these plans with an emphasis on the importance Availability of information, data, transparency and capacity building for all partner parties, and the development of life skills for citizens that enable them to enjoy all means of development in a way that guarantees them a fair standard of life, and the opportunity to exchange experiences for leaders of public work and civil society.

Provided that they have the ability to apply governance in its correct form in order to serve the plans of the state and human societies operate within the framework of three basic systems, overlapping and interacting, that exchange influence and influence, which are the basic systems of human society such as the natural system associated with the cosmic system and then the environment created by man and consists of the political system, The technological system, the urban environment, and then the social environment, which includes the social system and the cultural system in the civilized environment, but it has developed over centuries of human history. Providing productive work and a better quality of life for all peoples, which requires significant growth in productivity and income and the development of human capabilities. Here, the importance of integrating the civil society sector into sustainable development strategy 2030, the need for an active role for civil society institutions in supporting the state’s efforts to find a balance between the economic, social, and environmental system to preserve natural resources in parallel with the developments taking place in the world, whether economic blocs or political alliances, globalization and the subsequent openness, as it has become inevitable to be Civil society has a role as an essential partner for the government, and as a contributor to achieving sustainable development and sharing responsibility. The imperative of a role for civil society in supporting the 2030 strategy is evident in an attempt to find a solution to the problems that have emerged, especially related to the concept of "sustainable development", and the urgent importance of achieving the sustainability approach, as Civil society has a pivotal role in the development process with its three axes “economic, social and environmental development.” Indeed, the role of civil society has increased in recent decades as a result of economic, social, environmental and political changes. The importance of civil society is embodied in its organizations that can contribute to sustainable development in a real way if It succeeded in building, stabilizing and employing development awareness through real and effective participation in the development process. Civil society organizations include all bodies and non-governmental organizations whose activities are based on voluntary public work such as civil societies, professional and labor unions, political parties, federations of chambers of commerce and industry, charitable institutions , cooperatives and civil societies, voluntary bodies, human rights associations, women's rights associations, sports clubs, consumer protection associations, specialized associations and similar voluntary institutions.

Although these non-governmental organizations base their activities on the basis of voluntary work, it can be said that they are a society that is largely independent of the direct supervision of the state, although the mechanisms for its establishment are in accordance with the legislation regulating their work and despite their different names, but it can be said that they are all social economy organizations. And volunteer development

The term non-governmental organizations appears to be an expression coined by the United Nations in one of the paragraphs of the Charter, paragraph 71 of the Charter, “any international organization not based on a governmental agreement” ( ). This point or paragraph represents the distinction of non-governmental organizations, that is, those arising from private initiative. In this way, it differs from both governmental organizations, which are established by governments, and from sovereign states that do not owe it in terms of origin or funding. Therefore, they are groups distinguished by an international structure, meaning that the organizations must represent countries to which they belong. Accordingly, the organizations of the United Nations Economic and Social Council (NGOs) are considered global organizations and are not established by agreements between governments. The term has been used generally to refer to a broad level of non-profit, tax-exempt organizations engaged in international relief and development work. This broad meaning of the concept is similar to other similar organizations, cooperatives, unions, labor organizations, other non-profit media, and traditional voluntary organizations. The activity of each of them varies, as some may be active at the mediation level, and others may be managed locally within developing countries. They differ in size, development strategy, competition, and influence

NGOs are neither part of the government nor an agreement between governments. They may be research institutes, professional organizations, trade unions, chambers of commerce, religious institutes, political parties, and this definition is consistent with Kate Willard’s concept that non-governmental organizations include all independent, registered non-profit organizations (). While others argued that the concept refers to everything that is outside the scope of the government, and accordingly, it was defined as non-profit organizations outside the scope of government control, and this concept is largely in line with what came with the definition of the World Bank as those private non-profit organizations that work with countries. developing countries, to alleviate suffering and raise the level of poverty, protect the environment and provide basic social services, or contribute to community development (). Finally, David Curtin ends by making this term a dynamic name for participation, as the existence of participation depends on its existence, and for this reason he sees the necessity of looking at the concept from two aspects: the involvement of simple people in designing Their projects, their implementation, and also participation with the mediators in the struggle of the common people for equality, human rights and democracy, and for this he carried the meaning of his book "Democracy-Based Development. It is a group of social individuals who are aware of their interests that they have formulated and have a fixed structure and a well-known membership pattern that they seek to achieve. Their structures are consistent with their status, and they are often simple structures that are appropriate for times of crisis

Functions of civil society institutions:

1. **Achieving democracy**:

It provides a channel for voluntary participation in the public sphere and in the political sphere. Civil society organizations and associations are also a tool for individual initiative that expresses free will and positive participation stemming from volunteerism, not forced mobilization, which the state imposes on society to pretend to enjoy popularity and popular support.

2. **Fulfilling needs and protecting rights**:

At the top of these needs is the need to protect and defend human rights, including freedom of expression, assembly, organization, establishing or joining associations, the right to equal treatment before the law, freedom to vote, participate in elections, and dialogue and public debate on various issues.

3. **Social and political upbringing** :

This function reflects the ability of civil society to contribute to the process of building society or rebuilding it again, by instilling a set of values and principles in the souls of the individuals who are members of its associations and organizations, most notably the values of loyalty, belonging, cooperation, solidarity, willingness to bear responsibility, initiative in positive action, and interest and enthusiasm for public affairs. For society as a whole, beyond private concerns and narrow personal interests.

4 - Mediation and conciliation:

That is, mediating between the rulers and the masses by providing channels of communication and conveying the goals and desires of the government and citizens in a peaceful manner. In this context, interest groups seek to maintain and improve their status and gain a better position in society. Therefore, they move directly to influence the process of legislation and law-making and aim to reach... To a point of agreement and convergence between multiple opinions as a basis for stability. The function of expression, representation, and speaking on behalf of certain groups is linked to that organizational function, as civil society institutions undertake multiple tasks that begin with receiving demands that are usually conflicting and conflicting, collecting them, rearranging them, and dividing them into specific categories before delivering them to the government. If we imagine the absence of that organizational function, the result will be a deficit. The government is unable to deal with this huge amount of different demands that express conflicting interests of groups and individuals in society, which makes it confused. This function, as we have seen, means that civil society not only provides protection for citizens convicted against the government, but it is also a tool for protecting the government itself from the risk of exposure to violent unrest and protests. It also provides an element of protection for society as a whole from division, conflict, and disintegration.

5- Individual and group expression and participation:

With the presence of civil society and its institutions, individuals feel that they have open channels to freely present their opinions and viewpoints, even if they oppose the government and its policies, to express their interests and demands in an organized manner and in a peaceful manner, without the need to use violence as long as a peaceful alternative is present and available. The truth is that this function leads to strengthening the feeling of Individuals have belonging and citizenship and are able to initiate positive, voluntary work without restrictions. Rather, the government encourages them to move independently and freely without relying on it to serve society. They are reassured that their rights and freedoms are protected because there is a fortress they can turn to for protection in the event of the state encroaching on them.

6- Comprehensive development:
It is true that civil society is an important tool in achieving stability, but that does not mean that it does not achieve change and development. Recently, international organizations interested in development began to emphasize a new meaning for it, which is development by participation, on the basis that the many development experiences have failed because they were imposed by The side of the government is on the governed without involving them in it, while other cases have proven that the participation of the lower popular levels is the best guarantee for achieving success. The decisions reveal this clearly. What is true at the project or factory level is true at the national economy level.

Civil society jobs qualified to work in achieving sustainable development goals

Table (1)

Jobs	The role in achieving development
achieving democracy	Achieving the planning process with planning participation and participation in decision-making
Fulfillment of needs and protection of rights	Civil society units are suitable for use in promoting democratic concepts, which are among the most important requirements for development.
Social and political upbringing	Civil society is a major actor in socialization and cultivating loyalty and belonging.
Mediation and conciliation	A communication space between the government and the masses,
Individual and collective expression and participation	A window to display the opinions and trends of its members and components

Comprehensive development	A space for community participation in community development trends and efforts and directing them to serve their interests

(An appendix of a vision for the framework of partnership between civil society organizations in achieving the international sustainable development goals as well as the national goals of the sustainable development strategy)

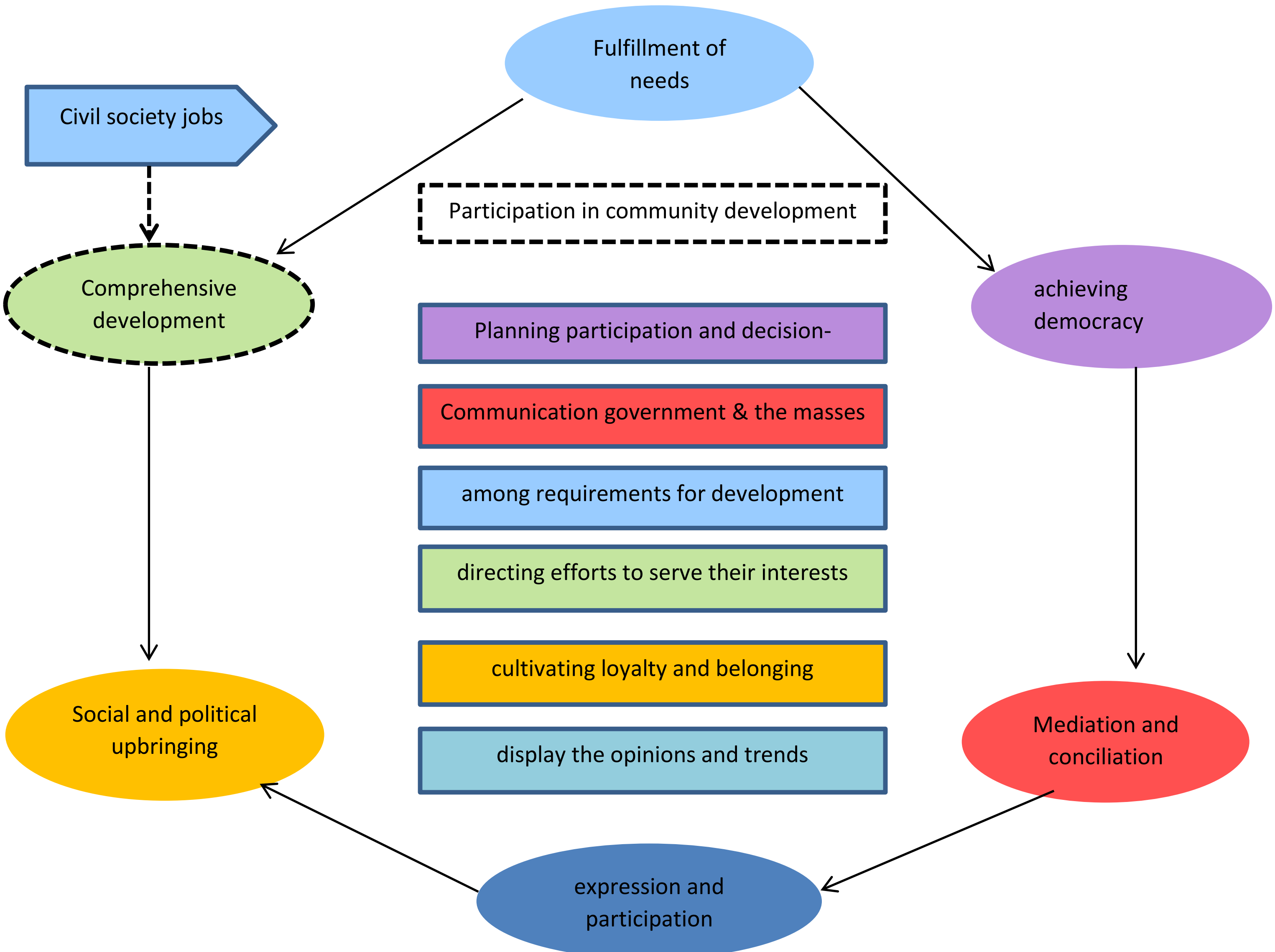

Figure 1

An illustration of the relationship between civil society functions and the ability to contribute to achieving sustainable development

First: The current situation and public policies related to civil society

There are more than 84,000 associations and NGOs working in:

Areas of care Childhood and maternity care Family care - - Social assistance Old age care Special groups and disabled care for prisoners Family planning Pensioners Human rights Social defense Cultural fields Cultural, scientific and religious services Literary activity Developmental fields, community development, organization and administration, economic development of the family, development Income, consumer protection, the field of environmental protection and preservation, the field of human rights and building developmental awareness.

However, a large percentage of them do not have a unified vision for national development programs that identifies the most important axes that constitute weaknesses or strengths to rely upon in the community action plans that are to be implemented within the framework of the international strategy from which the 2020 strategy must emerge. There is also a lack of documented analytical information for the most important the societal and economic issues involved.

The heterogeneity of civil society action plans and the political, social and economic frameworks in which these institutions operate lead to a failure to achieve tangible progress in any of the areas of development on which thousands of institutions work. Natural resources on new and unconventional concepts and perceptions.

The lack of compatibility of institutional capacities and principles of good governance with the aspirations, hopes, and priorities of society in all its segments, especially in rural areas, Upper Egypt, and the Bedouin and border areas, despite the importance of their role in those areas as a mediator between government agencies and citizens to ensure the participation of these groups in achieving development in their regions according to their priorities and actual needs until Executive bodies can include them in national programs and plans

.Second: the challenges facing achieving sustainable development in Egypt with regard to the sector

Institutional challenges

1- Absence of coordination and integration mechanisms between development partners (government / civil society / private sector / financiers) and the distribution of specific roles among the partners within the framework of 2020 sustainable development to achieve the targeted developmental impact.

2 .The organizing law does not clarify the role of civil society as a complementary and guiding partner to governments, not only in the civil society process Development, but also in striving to mobilize idle resources and energies, whether economic or human. Most civil society institutions need to build the capacities of those in charge of them to manage development projects, entrepreneurship, income-

generating projects, small and medium enterprises, methods of evaluation, follow-up, and impact measurement.

3 .The absence or availability of a database to monitor and classify NGOs in terms of geographical and qualitative scope efficiency and quality.

4 .Not defining areas of cooperation with ministries and local administrations for cooperation between them and civil society investment map.

5 .Lack of established institutional channels for exchanging information between civil and governmental institutions, which leads to non-use Good for resources.

6 .The lack of a sufficient number of joint projects in which civil society is a partner in achieving a certain achievement with its expertise or funding.

7 .Administrative, institutional and organizational challenges in some units of the administrative apparatus that supervises civil institutions, which sometimes leads to obstruction of work or the absence of the correct and required direction for it.

Economic challenges

1- Unequal access to economic resources, basic services, natural resources, and technology

New appropriate financial services, including microfinance and capacity building for the poor, have difficulty

Applicability of institutional capacity standards required by donors to all NGOs

2- Capacity building programs for grassroots associations through major umbrella association

3-Focusing the work of some civil society organizations on charitable work, while ignoring some important areas such as the field economic, cultural, environmental, social, educational and literacy eradication to achieve social justice and combat poverty.

4-The lack of a map of the needs of the local or international labor market or its availability. The lack of labor market for some professions and technicians

Which civil society neglects despite its important role in training sectors of youth and women on it in a way that serves the interest of the productive process for the benefit of the worker and the employer alike.

5-Poor self-financing of some civil society institutions based on service or micro-projects that contribute In assisting institutions in implementing real projects on the ground

6- The lack of a sufficient number of civil society institutions that work on economic development with a sustainable concept and provide consultations and technical support to business owners and simple workshops to develop their business or combined manufacturing areas for craftsmen so that they can achieve competitiveness and keep pace with market requirements for the benefit of those professions and achieve a greater economic return and convert them to environmentally friendly technologies.

7-The lack of legislation regulating economic activities, whether informal or within associations, in addition to legislation codifying the services provided by some of these associations, and easy access to individual and group marketing stores.

8- Difficulty obtaining investment information from the government, the business sector, or the private sector, which would direct associations to work within its framework to meet the needs of the labor market.

Social challenges

Social Justice

1-Some marginalized groups of society have been exposed to poverty as a result of not being included in development plans and not involving different people Society groups in the development process "People with disabilities and the elderly, and ignoring one segment and not others may expose some of them to poverty, whose impact on their social way of life is evident".

2-Lack of health coverage for many societal groups such as women, children, people with disabilities, and some marginalized irregular workers.

Community culture

3-The concept of volunteer work culture and local community participation has diminished in most areas of social work especially developmental, unlike the charitable and aid side.

The spread of some misconceptions about the rights of women and girls.4-

5- High rates of illiteracy among young people, especially women, who are not qualified for the labor market, which requires the use of modern technology. This is what civil society organizations can do to qualify and raise the efficiency of Egyptian workers and cadres.

Crisis of trust between citizens, government and civil society.6-

7-The absence of the role of the media in shedding light on the initiatives and programs of civil society.

8-The spread of some forms of discrimination and violence against women and girls everywhere, such as child, early and forced marriage, which civil society organizations must address through awareness-building programs through all means of influence, whether media, religious or otherwise.

Environmental challenges

1- Lack of awareness of many environmental issues, climate change and the role of human consumption pattern in affecting global warming.

2- Lack of awareness of the importance of taking into account the environmental dimension in modern projects in new cities, the importance of having environmentally friendly cities that achieve sustainability, and the absence of clear plans by the government to spread the culture of green economy and construction in small, medium and national development projects.

3- The weakness of the culture of energy rationalization and optimal consumption of natural energy resources and the lack of civil society participation in development projects related to energy projects. Failure to integrate measures related to climate change and the sustainable use of oceans, seas and marine resources in policies, strategies and planning at the national level.

4-Weak participation of NGOs in monitoring or reporting environmental encroachments, despite the provisions of the Environment Law They have the right to do so, but the reports are made on an individual basis by the affected citizens.

5- Lack of participation of NGOs in building awareness and changing green consumption and production patterns, especially for women Contributes to stimulating markets for products that are less harmful to the environment and achieving efficient use of resources and rationalization of consumption.

Third: Sustainable development

United Nations Sustainable Development Goals (SDGs)

It is recognized that civil society has an effective role in achieving the UN goals for sustainable development and Egypt's 2030 strategy

Based on the United Nations Sustainable Development Goals 2030, resources must be used rationally in order to...

Raising the standard of living, reducing poverty, striving to stabilize population growth, raising the level of health and educational services, especially in the countryside and slums, protecting natural resources, making optimal use of agricultural land and natural resources, and creating development that moves society into the era of clean industries and technologies that use the least amount of resources possible. It produces a minimum of polluting and harmful ozone gases.

for example: Goal 10: End hunger, achieve food security, improve nutrition, and promote sustainable agriculture by ending all forms of malnutrition, addressing the nutritional needs of adolescent girls, pregnant and lactating women, and the elderly, doubling agricultural productivity and the incomes of small food producers, especially women, small-scale farmers, and ensuring equal access to opportunities to achieve success. Added value and their access to non-agricultural job opportunities with the existence of food production systems sustainable, and implement robust agricultural practices that increase productivity and yields, help maintain ecosystems, enhance resilience to climate change and to cope with extreme weather events, droughts, floods and other disasters, gradually improve land and soil quality, increase investment, and prevent restrictions on Trade and correct distortions in global agricultural markets and adopt measures to ensure the sound functioning of commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, to help reduce the severity of food price volatility.

Goal 8: Ensure comprehensive and equitable quality education and promote lifelong learning opportunities for all so that all girls and boys, both girls and boys, enjoy free, equitable and quality primary and secondary education, leading to appropriate and effective educational outcomes, good quality early childhood care and equal access to on quality and affordable vocational and higher education, increasing appropriate skills, including technical and vocational skills, for work, decent jobs and entrepreneurship, eliminating gender disparities in education and ensuring equal access to all levels of education and vocational training for vulnerable groups, including This is for people with disabilities and children living in fragile situations.

Goal 5: Achieve gender equality and empower all women by eliminating all forms of discrimination and violence

against women and girls everywhere and curtailing harmful practices, such as child, early and forced marriage, and circumcision, in addition to the full and effective participation of women and equal opportunities available at all levels of decision-making in political, economic and public life, and seeking to carry out reforms to give women equal rights in economic resources, promote the use of women-empowering technology, and strengthen existing policies and legislation such as to advance gender equality and empower all women and girls at all levels.

Goal 6: Ensure the availability and sustainable management of water and sanitation for all so that everyone has equitable access to safe and affordable drinking water and sanitation services and improve water quality by reducing pollution, stopping and minimizing the dumping of waste and hazardous chemicals, and reducing sewage untreated by half, greatly increasing recycling and safe reuse and increasing water use efficiency in

Significantly increase all sectors and ensure sustainable withdrawal and supply of fresh water in order to address water scarcity and scarcity and strive to implement integrated water resources management and protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes, and promote and support capacity building in the field of Support activities and programs related to water and sanitation, recycling and reuse technologies And enhancing everyone’s participation in improving water and sanitation management.

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all and work to significantly increase the share of renewable energy and expand the infrastructure and level of technology in order to deliver modern and sustainable energy services to all.

A: The main principles and directions for achieving sustainable development for NGOs

1-Alignment of civil society activities with the sustainable development strategy 2020

Civil society activities complement each other and not conflict. 2-

3-Emphasizing the importance of sustainable consumption and production patterns to achieve sustainable management and efficient use of resources natural.

4-Encouraging large companies to adopt sustainable practices, including sustainability information in their reporting cycle and promoting sustainable public procurement practices.

5- Ensure that relevant information and awareness of sustainable development and lifestyles in harmony with nature are available

6- Supporting the strengthening of Egypt's scientific and technological capabilities to move forward towards achieving more patterns of consumption and production sustainability

7- Develop and implement tools to monitor the impacts of sustainable development on sustainable tourism that creates jobs and promotes local culture and products

8- Reducing per capita food leftovers at the retail and consumer levels by half, and reducing food losses at production stages and supply chains, including post-harvest losses.

B: Cooperation between the government and civil society to suggestion

The vision and message is a society capable of making efforts and participation in order to achieve sustainable development that guarantees future generations their right to these wealth, and achieves their food security, well-being and happiness through a participatory process between civil society institutions, the government and the private sector that seeks to achieve development in general and sustainable development in particular. The goal of development is not merely to increase production, but rather to enable people to expand their options by developing capabilities, and not only by maximizing economic benefit or well-being, but also by raising the cultural, social and economic level together without wasting natural resources and ecosystems

Suggestion the message

Maximizing a major role for civil society to achieve development in general and sustainable development in particular, as a result of the global transformations and developments witnessed by the global economies, and with the development of the concept of development from economic development to sustainable development that works to achieve a balance between the environmental aspect on the one hand and the economic and social aspect On the other hand, the need for civil society, as well as for its organizations, to solve problems and crises, as well as to spread environmental awareness among members of society, has become an objective.

D: The strategic objectives of the sector and the extent to which they achieve the goals of the United Nations for sustainable development supporting the state's efforts to achieve the three dimensions of development goals

Economic field

Work to employ natural and human resources in order to raise the standard of living, reduce poverty, achieve the well-being of citizens, and find mechanisms for communication and coordination between government agencies, the private sector, and international and local organizations that represent civil society to meet the needs of current generations without compromising the requirements of future generations.

Social field

Stabilizing population growth and raising the level of services in all environmental, economic, cultural, health, educational and social sectors to achieve sustainable development.

Environmental field

Protecting natural resources and optimal use of agricultural land, water resources and coastal areas, taking into account the environmental dimension in development projects and spreading the culture of sustainable economy and green building in small, medium and national development projects.

E: The priorities and extent of the sector's achievement of the goals of sustainable development

1. Sustainable economic development) and linking it to the goals of the United Nations for sustainable development
2. Support the various economic and service sectors and fulfill their requirements in relation to the sector
3. Support and extent of the sector's contribution to increasing national income-
4. Stimulating the economy, diversifying production sources, and creating new economic opportunities and fields/sectors-
5. Increase efficiency in the use of natural resources and other inputs and reduce costs
6. Increasing the competitiveness of the Egyptian product in the internal and external markets

.

Achieving development and linking it to the goals of the United Nations for social sustainable development and the extent of the sector’s contribution to human

development and the well-being of the Egyptian person with regard to the following:

1-Human development, spreading awareness, culture, and sustainable consumption and production patterns-

2-improve health

Create new and sustainable job opportunities- 3

Poverty eradication- 4

Achieving social justice and equality- 5

Integration of youth, women and people with disabilities in the development process- 6

7-Investing in and developing natural resources and linking them to the goals of the United Nations for sustainable development

Water

1-Ensure availability and sustainable management of water and sanitation for all so that everyone has equitable access to safe and affordable drinking water and sanitation services

2-Improving water quality by reducing pollution, stopping the dumping of waste and hazardous chemicals, and minimizing leakage.

3- Halve the percentage of untreated wastewater, and increase recycling and safe reuse by a large percentage through low-cost technologies, especially in rural, remote and desert areas.

4- Significantly increase water use efficiency in all sectors and ensure sustainable withdrawal and supply of fresh water in order to address water scarcity and scarcity

5-Endeavor to implement integrated water resources management and protect and restore water-related ecosystems, including mountains, wetlands, rivers, groundwater and lakes.

6-Promote and support capacity building in the field of activities and programs related to water and sanitation

7- Using recycling and reuse technologies and supporting and promoting everyone's participation in improving water and sanitation management.

Energy

1-Ensure access to affordable, reliable, sustainable and modern energy for all

2-Ensure universal access to affordable, reliable, modern energy services

3- Achieving a significant increase in the share of renewable energy in the group of energy sources through the provision of appropriate incentives.

4- Doubling the rate of improvement in energy efficiency by raising awareness of all segments of society.

5- Promote cooperation to facilitate access to clean energy research and technology, including those related to renewable energy, energy efficiency and advanced and cleaner fossil fuel technology, and encourage investment in energy infrastructure and clean energy technology.

6-Expanding the scope of infrastructure and improving the level of technology in order to provide modern and sustainable energy services to all at reasonable prices and through local technologies that can provide job opportunities.

.lands

Optimal use of fertile lands with sustainable food production systems and implementation of agricultural practices

They lead to increased productivity and yields, and help to maintain ecosystems

.**Preserving environmental systems and increasing their regenerative capacity to support the path of sustainable development**

Wild Environment**-**

Marine environment and coastal areas**-**

Biodiversity**-**

Avoid, reduce and deal with waste, chemicals and hazardous waste**-**

Avoiding and minimizing the natural risks that the sector's activity may contribute to**-**

Adapting to and reducing the potential risks of climate change in Egypt**-**

This is in order for those ecosystems to continue providing their services, which are the basis for the life and development of societies

Recommendations

Fourth: Governance and institutions necessary to achieve sustainable development

Institutional reform

Unifying interests by crystallizing collective positions on the issues and challenges facing its members, such as the ozone hole, ocean pollution and climate change. This function is mainly practiced through trade and professional unions, chambers of commerce and industry, and businessmen groups.

Institutional development of civil society organizations so that they provide opportunities to practice environmental activities that lead to increased income through these same institutions, such as the projects of productive cooperative societies, the activity carried out by consumer cooperative societies, small projects, and vocational training projects carried out by trade unions and trade unions.

Achieving decentralization in managing environmental systems and managing natural resources to achieve sustainable development

Legislation and laws

The existence of a law or legislation that clarifies the role of civil society as a partner for governments, not only in the development process, but also-

Also in seeking to mobilize idle resources and energies, whether economic or human.

Community participation Achieving social integration highlights its importance as one of the outlets for expressing opinion in front of people who do not lose the ability to influence political decisions that directly affect their lives

Providing services and reducing poverty rates by providing job opportunities and social services, especially for the purpose of education

Building capacities, improving health and providing information in all fields that contribute to improving their economic, social and environmental conditions

Transparency and accountability

Fulfilling needs and protecting rights, on top of those needs are human rights, freedom of expression and the establishment of associations and parties.

•Opening channels of permanent communication and conveying the objectives and policies of the government and citizens in a proper manner. • Expression and individual and collective participation through the presence of open channels to present opinions and points of view freely, even if they oppose the government and its policies, to express demands in an organized manner and through democratic mechanisms.

Spreading a culture and respect for the values of voluntary work, teamwork, commitment to public accountability, transparency, tolerance and respect values. Fighting corruption

Achieving order and discipline in society so that civil society becomes a tool for evaluation and follow-up of government performance and controlling the behavior of individuals and groups towards each other.

•Achieving democracy by providing a channel for voluntary participation in the public sphere, and in the political sphere, which is an administration for the individual initiative that expresses free will and positive participation. •Establishment of control mechanisms acceptable to both the governmental and non-governmental side to monitor the performance of civil associations.

The role of sweeteners

Social and political upbringing and contributing to the process of building society or rebuilding it anew by instilling values and principles in the hearts of individuals.

•Resolving most of the internal conflicts between members by amicable means without resorting to the state and its bureaucratic apparatuses, and strengthening

The foundations of collective solidarity and the management of differences in opinions and orientations in consensual ways. The production of new leaders through the preparation of new leaders from successive generations, starting with institutions and considered a storehouse, where capabilities are discovered through collective activity, which assume leadership responsibilities in local and national societies later on.

Strengthening domestic resource mobilization, including through support, to improve capacities.

Allocating a percentage of the gross domestic product to support production and development activities.

Mobilizing additional financial resources from multiple sources for sustainable development

Adopting systems to encourage investment in the areas of sustainable development

Fifth: Enabling policies and implementation mechanisms necessary to achieve the strategic objectives

Building the capacity of civil society on how to manage small and medium projects that contribute to achieving sustainable development, methods of evaluation and scientific follow-up, preserving cultural heritage, developing belonging and feeling the depth of Egyptian civilization, culture and identity, and their respect for their environment and local communities. Raising public awareness, institutional support and capacity building

•Improving planning and efficient use of resources at the governmental and community levels.

• Stimulating sustainable production and consumption systems.

Providing job opportunities, raising the standard of living and providing a better living environment.

• **-**Achieving decentralization in management, whether for environmental systems or economic resources, to achieve sustainable development

•Eliminating poverty, unemployment, women's problems and food security.

Sixthly: programs and initiatives

- . **Community initiatives that seek to maximize the role of the family in raising generations that are well aware of what the environment is and what its dangers are to society, through the example of the father and mother when paying attention to cleanliness and the rational use of everything so that the impact of the individual's bad use of the environment is reduced or limited. The goal is to add a useful member who is aware being aware of the dangers surrounding the environment is a role model for his family.**

- **Providing methods for self-financing for some civil society organizations based on micro-projects.**

- **Initiatives for educational institutions whose role is complementary to the role of the family in improving the child's behavior at school, as there are environmental departments in schools that contribute to raising environmental awareness, and the school curricula must include a course independent of the environment and the need to carry out activities that serve the environment.**

- **Developing the role of workers and trade unions by informing workers of the harms of poor use of some technologies that pollute the environment, which may cause them diseases. Here, unions demand the necessity of obtaining clean technologies and achieving a good working climate.**

- **Seek assistance from civil society organizations and associations that have growing and advanced experience in the field of environmental protection - and involve them in developing development plans.**

- **Holding seminars, whether in public or private international forums, or on radio and television, explaining to specialists how to preserve the environment.**

- **Activating the role of social and sports clubs to highlight the role of individuals in sustainable awareness of the dangers of pollution, especially for young children and grandchildren of members, or by holding seminars to which specialists are invited.**

- **Environmental management of development projects implemented by civil society organizations so that the axis of environmental preservation is integrated into these projects, as well as conducting continuous environmental assessment of development projects and spreading environmental awareness, education, training and education. Therefore, there is a close connection between sustainable development, media, and civil society.**

- **Integrating religious institutions in educating people through lessons, weekly sermons and seminars to highlight the disadvantages of environmental pollution on nature.**

- **Maximizing the role of local popular councils in cities and villages to carry out their role in creating social, economic, political and cultural development in all aspects of local society, carrying out their developmental role, preserving the environment, monitoring the negatives of the executive units, imposing penalties on violators, and reforming what some have spoiled through the environmental sanitation axis. in order to achieve sustainable development**

Seventh: Implementation, evaluation and follow-up mechanisms Criteria must be put in place to measure the effectiveness of civil society and define goals that it seeks to achieve, ending with satisfying needs

Society through its service and charitable role, so that there must be standards by which those goals that it seeks are measured

These institutions through them and through their multiple roles to achieve development by dealing with the environment and its security components to preserve on the environmental balance and natural resources. These criteria can be expressed through:

Activating informed and effective participation in bringing about sustainable development

- **Developing awareness of all kinds among all segments of society**
- **How to manage natural resources**
- **Preserving cultural heritage and achieving sustainable production and consumption**
- **Raising public awareness, institutional support and capacity building**
- **improve resource planning and improve public health;**
- **Raise the degree of belonging of individuals and their respect for their environment and their communities**
- **Providing job opportunities, raising the standard of living and providing a better environment for living and working**
- **Achieving decentralization in the management of environmental systems to achieve sustainable development**
- **Eliminate the problems of poverty, unemployment, women's problems and food security**

An appendix of a vision for the framework of partnership between civil society organizations in achieving the international sustainable development goals as well as the national goals of the sustainable development strategy

Table (2)

Sector	International goals	Expected role	Partner
Agriculture	**2-6-8-12-13**	•Raising farmers' awareness of all information related to modernizing agricultural and irrigation systems and the efficiency of resource consumption with the aim of sustaining them and increasing productivity. •Modifying negative behaviors, such as excessive use of pesticides and chemical fertilizers. •Disseminate information about crops with economic returns as an alternative to water-intensive agriculture.	Ministry of Agriculture, Ministry of Environment, Ministry of Irrigation, Agricultural Research Centres
Industry	**7-8-9-12-13**	•Raising the efficiency and requalifying workers to keep pace with the requirements of the labor market. •Dissemination of information on the fields of small and medium enterprises and financing mechanisms that serve the industry sector based on the market study. •Awareness of industrial security and work environment safety. •Playing a supervisory role over polluting industries that are harmful to the environment and health.	Ministry of Industry Ministry Environment, industrial security, industrial modernization center, project agency Small and medium ,research centers
Tourism	**8-12-14**	•Capacity building and raising awareness in all fields related to the tourism sector, whether directly or indirectly, with the aim of improving the industry and raising the efficiency of the services that feed it. •Raising awareness of ecotourism, creating a supportive climate for local communities, and building capacities to raise their efficiency to exploit cultural and local advantages in the field of tourism. •Raising awareness of the importance of natural wealth and its role in achieving development in general and tourism in particular.	Ministry of Tourism, Ministry of Environment, Tourism Promotion Authority Projects Authority Small and medium Ministry of Education, Universities
Housing And communities Urbanism	**6-7-11-12-15**	Spreading the concept of sustainable communities and cities at the community and private sector levels. •Spreading a culture of efficient consumption of all resources •Disseminate available and local applications and alternatives to unsustainable consumption patterns. Encourage and provide information on small and medium enterprises that can	Ministry of Housing Ministry Environment, Ministry of Electricity Ministry of Local Development, Projects Authority Small and medium

		contribute to achieving efficiency and rationalization of consumption and reducing and reusing waste.	Building Research Center
Transport And transportation	**7-11-12-13**	Encouraging mass transportation, monitoring the quality of its services, and adhering to set prices. •Spreading positive and civilized behaviors for using public transportation. •Educating drivers/citizens about information about rights and duties in the field of transportation. •Spreading a culture of protecting the environment from air pollution, emissions and climate change.	Ministry of Transport, Ministry of Environment, Ministry of Local Development
Investment And financing	**1-8-9-14-15**	•Publish and make all information available to encourage local investment and small and medium enterprises and provide technical support and studies required for the local and global market. •Introducing financing mechanisms and investment opportunities in rural and desert areas.	Ministry of Investment, agency Small Projects Medium, Ministry of Local Development, banks
Environmental disasters and climate change	**1-3-11-13**	•Educating the community on how to reduce and adapt to the phenomenon of climate change. •Raising the efficiency of fragile and marginalized groups to address the effects of environmental disasters. •Dissemination of information required for each geographical area regarding the environmental risks it is exposed to and how to deal with it.	Ministry of Environment, Ministry of Education National councils Specialized
Waste	**15-14-12**	•Disseminate information and increase awareness of the importance and means of benefiting from agricultural residues. •Dissemination of technologies and mechanisms for the reuse and recycling of all kinds of waste, •Dissemination of investment information, especially for small and medium enterprises. •Micro-scale waste recycling of all kinds. •Disseminating information about the waste exchange in craft and industrial areas as opportunities for investment and efficient resource consumption. •Reducing the use of plastic and materials harmful to the environment through community initiatives. •Awareness of consumption patterns that limit the amount of waste. •Activating the community’s role in managing the waste system.	Ministry of Environment, Ministry of Local Development, Ministry of Agriculture Projects Authority small and medium union, Industries, banks, Federation of Chambers of Commerce, Ministry of Information

Sector	International goals	Expected role	Partner
Commerce	1-2-8-12	• Modifying consumption patterns to overcome the greed of merchants and exploitation of consumers. •Directing society to use environmentally friendly products and creating awareness of their economic, social and health impacts.	Ministry of Industry and Trade Consumer Protection Agency, Ministry of Environment
foreign trade	12-9-8-7	• Building partnerships with associations from friendly countries to encourage the exchange of products, especially environmental and heritage products, which have competitive advantages and are worked on by women and can achieve an economic return.	Ministry of Investment, Ministry of Foreign Affairs, Export Development Agency
technology Information	7-8-9-12	• Making important information available to society to achieve sustainable development. • Using it to promote and market applications for local sustainable development, whether in local or global markets	. Ministry of Communications
Health	3-6-5-11-12-14-15	• Spreading healthy and environmental habits and behaviors that work to prevent diseases. •Providing information about different diseases and how to care for patients with them to integrate with health care. •Monitoring health services and filing any violations and complaints through legitimate channels and following up on complaints. • Educating women about important information to take care of their health and their children and to raise a generation that enjoys good health	. Ministry of Health, Ministry of Environment, Ministry of Education, Specialized National Councils, Ministry of Information
Education	1-4-5-8	• Reducing illiteracy rates, especially in rural areas and among women. •Reducing dropout rates in education- •Providing volunteer efforts to assist poor families in bearing the burden of educating their children. •Creating educational activities complementary to the education message through local applications	. Ministry of Education, Adult Education Authority, Specialized National Councils for Women and Childhood, Ministry of Solidarity Social
Labor and Employment	1-8-9	- • Providing information about the labor market and coordinating with the private sector. •Providing advisory and technical services for small and micro projects that achieve sustainable development goals. •Networking between owners of professions and between them and complementary professions in order to compete with them and increase their income	. Ministry of Manpower, Projects Authority Small and medium sized, Federation of Industries, Federation of Chambers, trade unions

Social solidarity	Goal 17	• Protect and increase the capacity of fragile and marginalized classes to address economic, environmental and societal risks. •Achieving equality and equal opportunities through community awareness and providing positive discrimination for the benefit of the most vulnerable groups. •Work to combat societal ills that cause a delay in progress towards achieving sustainable development, such as weak teamwork, corruption and nepotism •Racism and acceptance of other opinions, through specialized programs and activities. •Reducing the phenomena of social class separation and the shrinkage of the middle class through activities that bring the social classes closer together to spread community peace	. Ministry of Solidarity Social, councils National Specialized Women, Childhood and Disability, Ministry Media, Ministry of Culture, corporate social responsibility
Culture	4	Spreading the principles and characteristics of the Egyptian culture. •Encouraging reading and knowledge, especially since childhood, to create a generation aware of the issues of its society. •Interest in spreading culture in all governorates, rural and Bedouin areas •Organizing competitions and activities that would raise the value of the Arabic language and cultural and artistic programs that enhance belonging to the Egyptian identity. •Organizing visits to cultural heritage to create community awareness of its protection. • Exploiting attractive means and information technology to spread cultural values	Ministry of Culture
Water Resources	2-6-13	• Rationalization and efficiency of use of water resources in all sectors. •Awareness about stopping encroachments and protecting waterways from pollution. • Disseminating low-cost local technologies and alternatives that achieve efficiency and rationalization of water resource consumption	. Ministry of Irrigation, Ministry of Environment, research centres
Renewable energy	12-11-9-7	•Educating the community about the mechanisms of rationalization and efficiency of energy consumption in all sectors. •Disseminating renewable energy technologies appropriate to different scales •Geographic.	. Ministry of Electricity and Energy, Ministry of Environment, universities, research centers, unions

		•Capacity building for technical workers to maintain and operate renewable energy technologies •Awareness of mechanisms to stimulate and finance the transition to renewable energy. • Disseminating information and studies for small and medium projects in the field of renewable energy	
Land use	13-15-11-2	•Stop encroachments on agricultural lands through community awareness. • Awareness about protecting soil from various types of pollutants.	Ministry of Agriculture, Ministry of Environment, research centres
Biodiversity	12-15-14-2	•Raising awareness of the importance of preserving biological diversity, especially in food security. •Disseminating information about economic activities that depend on the sustainable use of natural resources. •Connecting children, adolescents and youth to the environment surrounding them and their role in protecting it through educational activities. •Raising awareness of the importance of natural capital in Egypt and in every geographical area. Publishing associations to protect plants and animals, especially those threatened with extinction,	Ministry of Environment, universities, Research centres, Ministry of Education
coastal and marine areas	15-14-13-12-2	•Raise awareness of the importance of the coastal and marine environment and how to preserve it. •Awareness of positive practices and behaviors in economic activities. •And recreational activities practiced in coastal and marine areas. •Forming volunteers to protect the beaches from various societal groups	, Ministry of Environment, Ministry of Tourism, local development

Conclusion

1- The relationship between the characteristics of civil society and the connection to sustainable development goals..... *Referring to ....(Table 3)*

Table (3)

Characteristics of civil society	*Linkage to sustainable development goals*
Terms and characteristics • Organizational pluralism	A point of convergence. Civil society is homogeneous groups with common ideological, professional, or religious ties in the form of arranged groups that facilitate their contribution to development on a regular basis in specific development sectors.
• Resources	A complementary source of cooperation between the government and civil society
Moral and ethical conditions and characteristics • Independence	The limits of authority intervention provide a wider space and freedom for civil society movement and activity, and provide mechanisms that complement government routine
• The presence of clear and fixed limits on the state's authorities in its relationship with society	A social communications network that limits state bureaucracy, capable of fulfilling society's aspirations
• Respect the existing law and order	The existence of a state capable of imposing rules, which leads to regularizing the relationship between development parties and achieving development
• Change and competition through peaceful means	Complementary to the government within the limits of peaceful tools and channels
• Sense of belonging and citizenship	Catalyst for development
• An environment conducive to accepting ideas and patterns that serve the purposes of development	. An environment conducive to accepting ideas and patterns that serve the purposes of development
•. An environment conducive to accepting development curricula and systems	. An environment conducive to accepting development curricula and systems

***2*-Ngos can make a rule in sustainable development policies in practical**

This is because its functions are linked to the roles it plays to support administrative reform policies with popular participation to achieve sustainable development policies. *..... Referring to .... (Table 1+figure 1)*

3-There are supportive roles for civil society with all development partners in the government sector.

Referring to ....(Table 3)....

4- Civil society can work on sustainable development goals. (Referring to ....Table 2+Firist point)

5- There is a need for institutional reform of civil society organizations

Referring to.... (second point)...

Table (4)

Characteristics of civil society	***Related challenges***
Terms and characteristics • Organizational pluralism	Heterogeneity of civil society action plans and the political, social and economic frameworks within which it operates
• Resources	Weak self-financing for some civil society institutions based on service or micro-projects that contribute to helping institutions implement real projects on the ground.
Moral and ethical conditions and characteristics • Independence	he regulating law does not clarify the role of civil society as a complementary and guiding partner to governments
•The presence of clear and fixed limits on the state's authorities in its relationship with society	Absence of coordination and integration mechanisms between development partners (government / civil society / private sector / funders) Distribution of specific roles among partners within the framework of sustainable development to achieve the targeted development impact

• Respect the existing law and order	Lack of legislation regulating economic activities, whether informal or within associations
• Change and competition through peaceful means	Failure to identify areas of cooperation with ministries and local administrations for cooperation between themselves and civil society
• Sense of belonging and citizenship	Crisis of trust between citizens, government and civil society
Accept ideological pluralism	The concept of a culture of volunteer work and local community participation has diminished in most areas of social work, especially development
•Democracy within civil society.	Civil society institutions need to build the capabilities of those in charge of them

4- here has become a vision in ministries and government agencies towards the role of civil society, and the vision for integration into development processes may foretell cooperation between the government and civil society in Egypt in the coming period.

The government and civil society consulted to develop a new vision and message for civil society in line with the policies and vision of sustainable development

) *Referring to ….(Table 2+second point**….***

5- There are clear ideas and data that help scientific research and policy monitoring on the subject of civil society and its role in achieving sustainable development in Egypt.

References

- Edwards, Michael. “Civil Society.” Polity; 4th edition, December 4, 2019, ISBN-10: 1509537341.
- Edwards, Michael. “The Oxford Handbook of Civil Society.” Oxford University Press, July 1, 2013, ISBN-10: 019933014X.
- Ehrenberg, John. “Civil Society: The Critical History of an Idea.” New York University Press, 1999, ISBN-10: 0814722075.
- Putnam, Robert D. “Bowling Alone: The Collapse and Revival of American Community.” Touchstone Books by Simon & Schuster, August 7, 2001, ISBN-10: 0743203046.
- Satyanath, Shanker. “Bowling for Fascism: Social Capital and the Rise of the Nazi Party.” National Bureau of Economic Research, July 2013, https://www.nber.org/system/files/working_papers/w19201/w19201.pdf.
- Williams, Colin C. (editor). “Routledge Handbook of Entrepreneurship in Developing Economies.” Routledge, September 30, 2020, ISBN-10: 0367660083.
- Jerry van Sant, "Opportunities and Risks for private Voluntary organizations as agents of LDc policy change”, World development, Vol. 17, No. 11, 1987: p. 1730.
- Mario pardon, "Non – governmental organizations: from development Aid to development Cooperation", World development, p.70.
- Kate wellard and James g. Gopestake, eds., Non-governmental Organizations and the state in Afeica, (London, N.y: Routledge, 1993) P.5.
- Aubrey Williams, "A Growing Role for NGOs in Development", Finance & Development, No. 4, December 1990, P.31.
- John clark, Democratizing Development: The of voluntary organization, (U.S.A): Kumariam press Inc., 1991) p.50.
- Manar M. wafa, "Regional Non-governmental organizations and Human Rights in the Arab world", MA. Thesis, (Cairo: American university in Cairo, 1991) P.13
- David L.Blamey and Mustapha Kamal pasha, "civil Society and Democracy in the Third world: Ambiguities and Historical possibilities". Studies in Comparative International Development, vol.28, No1, 1993, P.6.

Impact of Gender Inequality on Economic Growth in Egypt

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Received: October 10, 2020 Accepted: November 23, 2020 Online Published: December 25, 2020

Abstract

The main objective for this paper is to investigate the impact of gender inequality on GDP growth rates in Egypt. The study uses econometric analysis through co-integration model and OLS estimates to estimate the effect of gender inequality on economic growth in Egypt during the period 1988 until 2018. The study finds that Egyptian economic growth rate over through this era is significantly positively affected by the growth rates of both female and male participation in labour force and Gender Parity Index with coefficients equal 0.09, 0.75, and 0.56 respectively. These results mean that 1% increase in female participation in labour force increases GDP growth rate by around 0.1%, 1% increase in male participation in labour force increases GDP growth rate by around 0.75%, and 1% increase in Gender Parity Index increases GDP growth rate by around 0.56%.

Finally, the study recommends that the Egyptian government expands female participation in labour force through expanding education opportunities for female and stopping discrimination against female in job opportunities.

Introduction:

“Diversity is not only the right thing to do, but also the smart thing to do”; this is some words for IFC leader in Arab region as a comment on the current discrimination against women in labour market and education in Egypt. Especially in Upper Egypt, the discrimination against female is highly noted in areas such as getting job opportunities, entering secondary schools and universities, and even wealth inheritance. On the same road, Egyptian women are still paid less than men for equal work; the gender wage gap currently stands at 22 percent, according to a study published by the World Bank.

“As business leaders, entrepreneurs, employees and consumers, women are fundamental to inclusive growth—creating business models that boost job growth, build capital markets and raise per-capita incomes while promoting sustainable development,” IFC official concluded. According to a recent IFC study, companies with female directors performed significantly better than those without, with a return on assets three times higher and return on equity twice as high. In Egypt, only 7 percent of firms are led by a female top executive.

Consequently, it is noted that gender inequality in winning opportunities has become one of the highest priorities to solve in the Egyptian society. From the economic perspective, gender inequality has its economic effects on economic growth and sustainable development in Egypt.

For example, female participation in the Egyptian labour force during the last thirty years seem to be 20 percent lower than its similar in Europe and USA. Of course, customs and traditions, cultural norms, and misunderstanding for religious orders are formulating together the main factors that enforce women to deviate from the labour market as a result for differentiation between men and women in the Egyptian society. The literature in searching for the impact of gender inequality on economic growth in Egypt is so limited. Of course, there is a gap in this literature. Therefore, this study tries to open a discussion towards testing the impact of this discrimination on economic growth in Egypt.

The main objective for this paper is to investigate the impact of gender inequality on GDP growth rates in Egypt. From this perspective, the paper searches for discussing several types of discrimination against female in Egypt. Consequently, discrimination against female in fields like labour market, education, political participation, and leadership in government sector. Therefore, the paper will end up with recommendations to the Egyptian government to reduce gender inequality in Egypt and to highlight steps that have to be taken by Egyptian policy makers to empower women in the workplace and political participation.

The paper will propose and answer important questions such as; What are the main forms of gender inequality in Egypt in areas of labour market, education, political participation, and leadership in government sector?, what is the impact of gender inequality on GDP growth rates in Egypt?, What are the main recommendations for the Egyptian policy makers to empower women in the workplace and political participation?

Literature Review:

(Alrakhis, 2015) is the only paper that analysed the impact of gender inequality on economic growth in a group of rich Arab countries. It used an econometric model as Ordinary Least Square (OLS) model where the annual real GDP growth rates where the dependent variable and other seven independent variables formulated the regression model. It found that there is no significant relationship between gender inequality in education and labour force on economic growth in these rich Arab countries.

Another important paper is (Ali, 2015) that tested the impact of gender inequality on economic growth in Pakistan using time series analysis and multiple regression model for the period 1980 to 2009. It found that there is a positive relationship between gender inequality and economic growth in Pakistan.

Also we find (Yumusak et al., 2013) that investigated the impact of gender inequality in education on economic growth in Turkey. It used a co-integration technique for Turkish data through the period 1968 until 2005. It found that low level of education for women has a negative impact on economic growth. Moreover, there exists a positive long-run relationship between economic development and reducing the gender gap in education.

Methodology:

Following (Alrakhis, 2015), this study will use the same OLS regression model where the dependent variable will be the annual real GDP growth rates and three independent variables are percentage of female in labour force participation, percentage of male in labour force participation, and Gender Parity Index.

This study will use an econometric model in order to investigate the impact of gender inequality in the labour force and in Education on real GDP growth rates in Egypt. Therefore, the paper uses Labour participation rates for males and females and Gender Parity Index (measuring the ratio for girls to boys enrolled at the Primary level of education in both private and public schools) in Egypt as independent variables. The dependent variable is the real GDP growth rates.

The Ordinary Least Squares (OLS) econometric model is used to get the results. Annual data will be used during the period 1988 to 2018. The data is collected from the World Bank data base “World Development Indicators” (WDI).

Econometric Analysis and Results:

The first step in this econometric analysis is to conduct Dickey Fuller test for the group of variables in this study in order to reach to stability and determine the level of integration among these variables.

Dickey Fuller Test of Unit Root to Test the Stability of Examined Variables:

In Dickey Fuller test, H0 and H1 are formulated as follows:

H0: the variable is not stable.

H1: the variable is stable.

Table 1

ADF unit root test results for Real GDP Growth Rate and The Independent Variables

	ADF statistics		
Variables	Levels form	First differenced	Second Differenced
GDP Growth Rate	5.55	1.21	-4.12
Female Percent of Labour	6.67	1.65	-8.97
Male Percent of Labour	4.65	0.41	-5.29
Gender Parity Index	2.861	0.62	-8.14

From table 1, it is noted that integration of orders zero and one are not existed for these four variables. Therefore, first and second differences have been taken in order to reach stationarity for these variables. This means that the alternative hypothesis is rejected which indicates that these variables are integrated of order higher than one. Consequently, when second differences were taken for these variables, the null hypothesis that α 1 = 1 is rejected for all of them which indicates that these variables are integrated of order two I (2).

Table 2

Co-integration Analysis among Variables

Sample (adjusted): 6 120

Included observations: 120

Trend assumption: Linear deterministic trend

Series: GDP_RATE FEMAL_LAB MALE_LAB GENDER_INDEX

Lags interval (in second differences): 1 to 4

Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.214331	68.07318	47.85613	0.0002
At most 1 *	0.165878	31.40788	29.79707	0.0323
At most 2	0.024621	3.838822	15.49471	0.9161
At most 3	0.000326	0.049599	3.841466	0.8237

Trace test indicates 2 co-integrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.214331	36.66530	27.58434	0.0026
At most 1 *	0.165878	27.56906	21.13162	0.0054
At most 2	0.024621	3.789223	14.26460	0.8809
At most 3	0.000326	0.049599	3.841466	0.8237

Max-eigenvalue test indicates 2 co-integrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Co-integrating Coefficients (normalized by b'*S11*b=I):

GDP_RATE	FEMAL_LAB	MALE_LAB	GENDER_INDEX
-1.362084	-0.103993	0.898731	0.730553
0.241698	-0.245789	-0.142347	-0.316919

-3.038806	0.055463	1.210752	0.684632
0.447594	-0.069405	0.824541	-0.457816

Unrestricted Adjustment Coefficients (alpha):

D(GDP_RATE)	0.024086	0.006283	0.020211	0.001572
D(FEMAL_LAB)	1.434830	2.200708	-0.138642	-0.011500
D(MALE_LAB)	0.077929	-0.029419	-0.002413	0.003323
D(GENDER_INDEX)	-0.113743	0.016527	-0.015978	0.009473

1 Co-integrating Equation(s):	Log likelihood	-528.0883

Normalized co-integrating coefficients (standard error in parentheses)

GDP_RATE	FEMAL_LAB	MALE_LAB	GENDER_INDEX
1.000000	0.076348	-0.659821	-0.536350
	(0.03389)	(0.12933)	(0.06862)

Adjustment coefficients (standard error in parentheses)

D(GDP_RATE)	-0.032807
	(0.01916)
D(FEMAL_LAB)	-1.954358
	(0.72467)
D(MALE_LAB)	-0.106146
	(0.02920)
D(GENDER_INDEX)	0.154927
	(0.06805)

2 Cointegrating Equation(s):		Log likelihood	-514.3038

Normalized cointegrating coefficients (standard error in parentheses)

GDP_RATE	FEMAL_LAB	MALE_LAB	GENDER_INDEX
1.000000	0.000000	-0.654871	-0.590462
		(0.12710)	(0.06926)
0.000000	1.000000	-0.064826	0.708759
		(0.74761)	(0.40738)

Adjustment coefficients (standard error in parentheses)

D(GDP_RATE)	-0.031288	-0.004049
	(0.01945)	(0.00375)
D(FEMAL_LAB)	-1.422452	-0.690122
	(0.68740)	(0.13262)
D(MALE_LAB)	-0.113257	-0.000873
	(0.02944)	(0.00568)
D(GENDER_INDEX)	0.158922	0.007766
	(0.06909)	(0.01333)

3 Cointegrating Equation(s):		Log likelihood	-512.4091

Normalized cointegrating coefficients (standard error in parentheses)

GDP_RATE	FEMAL_LAB	MALE_LAB	GENDER_INDEX
1.000000	0.000000	0.000000	0.379568
			(0.26668)

0.000000	1.000000	0.000000	0.804783
			(0.39955)
0.000000	0.000000	1.000000	1.481252
			(0.45853)

Adjustment coefficients (standard error in parentheses)

D(GDP_RATE)	-0.092705	-0.002928	0.045222
	(0.04658)	(0.00380)	(0.02113)
D(FEMAL_LAB)	-1.001147	-0.697811	0.808401
	(1.65862)	(0.13541)	(0.75237)
D(MALE_LAB)	-0.105924	-0.001007	0.071304
	(0.07106)	(0.00580)	(0.03223)
D(GENDER_INDEX)	0.207477	0.006880	-0.123922
	(0.16669)	(0.01361)	(0.07561)

In table 2, results of testing for co-integration relationships between the variables are presented. It is the first stage of (Engle and Granger, 1987) two-stage producer which is the static long-run regressions. The results from the ADF unit root tests on the residuals in every bivariate static long-run equation showed in Table 2 indicate that residuals in all static long-run equations are integrated of order two. This means that the variables in every bivariate equation are co-integrated. Therefore, there is a long-run relationship between these variables that is assured by results shown in Table 3.

Table 3 clarifies the Ordinary Least Squares (OLS) estimates between variables where GDP growth rate is the dependent variable and the other three independent variables. The results indicate that there is a static long-run relationship between the variables. Coefficients of the three independent variables are positive reflecting positive relationships between GDP growth rate and the three independent variables. The last column that represents the probabilities for these coefficients are all less than 0.05 and R-squared and Adjusted R-squared are 0.84 and 0.81 respectively which means that the positive long-run relationship between these four variables is highly significant.

Table 3

OLS Estimates between Variables and Static long-run model for the effect of Independent Variables on GDP growth rate

Dependent Variable: GDP__RATE

Method: Least Squares

Date: 05/07/19 Time: 19:13

Sample: 1 120

Included observations: 120

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FEMAL_LAB	**0.096433**	1.338818	1.715269	**0.0483**
MALE_LAB	**0.752144**	0.781610	0.105096	**0.0164**
GENDER_INDEX	**0.569520**	0.403448	-3.518466	**0.0006**
C	**-0.558755**	4.669305	-0.119666	**0.0049**

R-squared	**0.841842**	Mean dependent var	0.947499
Adjusted R-squared	**0.814035**	S.D. dependent var	7.357868
S.E. of regression	7.080260	Akaike info criterion	6.777646
Sum squared resid	7669.902	Schwarz criterion	6.855512
Log likelihood	-528.0452	Hannan-Quinn criter.	6.809270
F-statistic	5.157655	Durbin-Watson stat	1.476387
Prob (F-statistic)	0.002008		

Consequently, the analysis must be transferred into the second stage of (Engle and Granger, 1987) to confirm this co-integration relationship through applying the EC models. Results for this second stage analysis are presented in the coming Table 4.

Table 4

The EC model for the impact of these three independent variables on GDP growth rate

Vector Error Correction Estimates

Date: 05/07/19 Time: 19:28

Sample (adjusted): 4 120

Included observations: 120 after adjustments

Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1	
GDP_RATE(-1)	2.431110	
	(0.39780)	
	[6.11144]	
C	-14.67906	
Error Correction:	**D(FEMAL_ LAB YEAR)**	**D(GDP_RATE)**
CointEq1	0.001004	-0.273018
	(0.00179)	(0.04461)
	[0.56155]	[-6.12002]
D(MALE_LAB (-1))	**-0.057970**	0.553122
	(0.03372)	(2.08961)
	[-0.69244]	[0.26470]

D(FEMAL_LAB YEAR (-2))	**-0.021368**	-0.405956
	(0.02530)	(2.12907)
	[-0.25051]	[-0.19067]
C	**-0.373834**	-2.808608
	(0.12410)	(3.09750)
	[-3.01240]	[-0.90673]
GENDER_INDEX	**-0.034524**	1.780367
	(0.03079)	(0.76858)
	[-1.12117]	[2.31643]
(MALE_LAB)	**-0.058443**	-0.901103
	(0.01505)	(0.37565)
	[3.88325]	[-2.39880]
R-squared	**0.859113**	0.456303
Adj. R-squared	**0.811194**	0.430235
Sum sq. resids	9.561155	5956.615
S.E. equation	0.255905	6.387389
F-statistic	5.514704	17.50453
Log likelihood	-4.514739	-499.9750
Akaike AIC	0.162529	6.597078
Schwarz SC	0.320293	6.754842
Mean dependent	0.040519	-0.207532
S.D. dependent	0.281094	8.462047

Diagnostic tests for the chosen EC model	
ARCH **0.34581**	**(0.5727)**

As presented in Table 4, the model where GDP growth rate is its dependent variable and three independent variables are percentage of female in labour force participation, percentage of male in labour force participation, and Gender Parity Index contains ECM which is consistent with the previous results obtained for the static long-rum regression and the ADF unit root tests for the residuals. Moreover, it is showed that the assumptions behind this EC model are supported by the diagnostic test Autoregressive Conditional Heteroscedasticity (ARCH).

Conclusion:

The study uses econometric analysis through co-integration model and OLS estimates to estimate the effect of gender inequality on economic growth in Egypt during the period 1988 until 2018. The study finds that Egyptian economic growth rate over through this era is significantly positively affected by the growth rates of both female and male participation in labour force and Gender Parity Index with coefficients equal 0.09, 0.75, and 0.56 respectively. These results mean that 1% increase in female participation in labour force increases GDP growth rate by around 0.1%, 1% increase in male participation in labour force increases GDP growth rate by around 0.75%, and 1% increase in Gender Parity Index increases GDP growth rate by around 0.56%.

Finally, the study recommends that the Egyptian government expands female participation in labour force through expanding education opportunities for female and stopping discrimination against female in job opportunities.

References

Ali, M. (2015). Effect of Gender Inequality on Economic Growth Case of Pakistan. Journal of Economics and Sustainable Development, 6(9), 10-10.

Alrakhis, M (2015). Impact of Gender Inequality on Economic Growth in the Arab Region. KSP Student Paper, Kuwait.

Almquist, E. M. (2013). Labor Market Gender Inequality in Minority Groups. Gender and Society, Vol. 1, No. 4 (Dec., 1987),, pp. 400-414.

Bhandari, R., & F.J., S. (1997). Rural Women in India: Assessment of Education. Journal of Research in Rural Education, pp 183-196.

Blumberg, R. (2005). Women's Economic Empowerment as th "Magic Portion" of Development. American Sociological Association.

Jacobs, J. A. (1996). Gender Inequality and Higher Education. Annual Review of Sociology, Vol. 22 (1996),, pp.153-185.

John Bauer, W. F. (1992). Gender Inequality in Urban China: Education and Employment. Modern China, , Vol. 18, No. 3, pp. 333-370.

Lagerlöf, N.-P. (2003). Gender Equality and Long-Run Growth. Journal of Economic Growth, , Vol. 8, No. 4 (Dec., 2003),, pp. 403-426.

Akram, N., hamid, A., & Bashir, S. (2011). Gender Differential in Education and their Impact on Economic growth. Growth of Pakistan. Journal of business and economics, 102-121.

Alam, T., Ellahi, N., Bukhari, M. A., & Jamil, N. (2010). FEMALE EDUCATION AND ECONOMIC PERFORMANCE A TIME SERIES ANALYSIS FOR PAKISTAN. Journal of Education and Sociology, 58-62.

Bhandari, R., & Smith, F. J. (1997). Rural Women in India: Assessment of Educational. Journal of Research in Rural Education, 183-196.

Blackden, C. M. (2003). Gender & Growth Africa's Missed Potential. Nairobi: Engendering PRSPs.

Blumberg, R. L. (2005). Women's Economic Empowerment as the "Magic Potion" of Development. Philadelphia: American Sociological Association.

Durand, T. (2010). Gender equality and economic growth. New York: Chatham House and Vivid Economics.

Elson et al; (1997). Inequalities in Education and Health Analysis of Pakistan. England: British Society of Sociology.

Ghulam, M. (2007). Gender Inequality in Education: Impact on Income, Growth and Development. Munich Personal RePEc Archive, 1-12.

Kakar et al; (2011). Relationship between Education and Economic growth. Journal of International Academic Research (2011) Vol.11, No.1. , 22-35.

Ronald, G. E., & Robert, S. S. (2000). Modern Labor Economics: Theory and Public Policy (7th ed ed.). NY: Addison-Weley.

OECD. (2012). Gender Equality in Education, Employment and Entrepreneurship: Final Report to the MCM 2012. Meeting of the OECD Council at Ministerial Level (pp. 21-60). Paris: OECD.