The Impact of Political Stability and Violence on The Libyan Trade Balance

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Abstract
This paper aims to analyses and study the impact of political stability and violence on the Libyan trade balance. To achieve this, a model was built based on the general equilibrium identity in the Libyan economy to measure the impact of political stability and violence on the Libyan trade balance. And by applying the methodology of Autoregressive distributed lagged Model (ARDL) for the period from 1986 to 2017. The results showed the high relative importance of the political stability and violence variable in explaining the changes in the Libyan trade balance, especially in the long term. In addition to the variables of the size of the domestic market, government spending, government revenue, the exchange rate of the Libyan dinar against the US dollar, and inflation in explaining the changes that occur in the Libyan trade balance. In general, the deterioration of the political, security and social conditions, armed conflicts, institutional division, and the governmental transitional period and its extension do not lead to an improvement in the economic environment of the state, and its results are in hindering the implementation and application of economic recovery tools to reach economic well-being. The Libyan parties must take into account the consequences of political and violence and security instability on the future of the Libyan economy
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Keywords
Political Stability and Violence,
Trade Balance,
Macroeconomics,
Autoregressive distributed lagged Model (ARDL).
JEL Classification: F52, F41, C82, B23.

Introduction

The paper aims to analysis the relationship between political stability and violence as a result of what is known as the Arab Renaissance and the post-2011 Libyan economic crisis. In 2011, most Arab countries witnessed widespread popular protests against their rulers or demands to change or reform their political systems, starting in the Maghreb countries and extending to Egypt, Syria, and the Gulf countries. Arabs used the term "Arab Spring" to describe revolutions, similar to those in Eastern Europe. Those protests quickly turned into armed conflicts, whether between the demonstrators and their rulers, or between the demonstrators themselves after the overthrow of the regime, to take over the reins of political rule and share wealth, and to turn in some cases into armed conflicts and civil wars, as happened in Libya, Yemen, and Syria.

Nevertheless, the question remains: why do protests and demonstrators turn into armed conflicts and civil wars? which had a significant impact on prolonging the duration of the crisis, resulting in political instability and an increase in violence, leaving negative consequences for the national economy and society. To answer this question, we list very briefly what the literature has reached in this aspect, focusing on studies that dealt with the relationship between resources and oil wealth and its relationship to armed conflicts, instability,

and violence, which can be benefited from in the paper's analysis of the Libyan crisis after the Arab rise, especially since Libya is a country that depends on the production and wealth of oil mainly as a sole source of income.

As according numerous studies, the leaders of militant groups[1] like to strengthen their control over the sources and sources of wealth or struggle over the distribution of their earnings, resulting in the underlying cause of armed conflicts, civil wars, instability, and violence (Ohmura, 2014). In fact, as according Ohmura, non-democratic regimes in oil-rich countries were unable to prevent the consequences of resource wealth on the emergence of military conflicts, political turmoil, and a rise in violent crime. Correspondingly, Espedal (2012) demonstrated that numerous research studies found that countries that exclusively rely on petroleum production to fund their gross domestic product, the public spending plan, or imports of services and goods are more sensitive to armed conflict than countries that have significant oil wealth and do not depend heavily on oil production. Ohmura (2014) believes that the higher the level of control over the sources of wealth and its plunder, the higher the level of motive for armed groups to accumulate private revenues and for their leaders to obtain sufficient financial resources that enable them to organize armed groups outside the authority of the government, and thus the higher the risk of the start of armed conflicts and the rise in The pace of violence, which often turns into civil wars, and the increasing neutralization of the work and role of governments in managing and controlling the sources and locations of wealth, which results in political instability, Ohmura (2014) also indicates that in times of armed conflicts, leaders of armed groups are able to gather individuals who support them, and their illegal activities increase, such as illegal commercial activities to obtain private returns, such as armed robbery, drug trafficking, and human smuggling, and the use of state resources, and the high level of crime.

As for the study of Collier and Hoeffler (see, Ohumura, 2014, p. 173), in which they researched the types of natural resources and their impact on stimulating the onset of armed conflicts and civil wars, they found that countries with natural fuel sources such as oil and gas are more Countries are prone to armed conflicts and civil wars. To reinforce this result, Humphreys (2005) found that the variable of oil production and revenues is associated with a positive and statistically significant relationship with the variable of armed conflicts and thus generates a strong incentive for the transformation of unarmed conflicts into armed conflicts and civil wars. Likewise, Humphreys believes that oil production is positively associated with the risks of armed conflict if the government is weak and vice versa in the case of a strong government.

As a result, the interaction between natural resources and the efficiency of state institutions[2] remains the most effective and

[1]Armed groups are defined as those illegal organizations (organized non-state actors) that were created as a result of the country's involvement in combat battles, have the capability of controlling the nation's wealth and the ruling authority, operate independently of the government, and have unwavering loyalty to their leaders.

[2] The degree of the nation's democratic system, government influence and people's commitment to following orders from the government, compliance with the rules, laws, and legislation currently in effect, and the ability to apply them, are all indicators of how effectively state institutions are functioning.

important factor in reaping the benefits of wealth and achieving social justice. Many studies show that natural resources and state institutions are among the most important determinants of economic growth from resource abundance. In the same context, Fjelde (2009) found that high levels of corruption generate a negative impact of oil wealth on local and political stability and generate a strong incentive for the transformation of conflicts into armed conflicts. These studies implicitly rule out that the leaders of the armed groups have the motives to turn the conflicts into armed conflicts and shed light on the role of the performance of the government and its institutions, whether they are weak and can be controlled by the leaders of the armed groups or if they are strong and outside their control. As for Espedal (2012), in his doctoral dissertation, he found that natural resources stimulate the onset of armed conflicts through their impact on the government and its institutions and the extent to which the leaders of armed groups are able to control them and control the decision over them, efficiency, than to focus on the existing situation of the crisis. Governments should also be aware of the important and strong relationship between oil wealth and the beginning of armed conflicts.

Taking this into account, the situation in the Arab Spring countries has, without a doubt, shifted from a political crisis to several economic crises, transforming the desired economic spring into a harsh autumn.

Research problem

The paper studies the potential impact of political stability and violence as a variable to capture the Libyan political and security crisis on the Libyan trade balance for the period from 1990 to 2017. In order to ensure the validity of expectations, the research question was identified as follows:

Did political change and the rise in violence in Libya lead to fundamental changes in the Libyan trade balance during the period from 1986 to 2017?

Research importance

Political stability and violence have been among the priority issues for the countries of the world since time immemorial because of their clear environmental, social, and economic repercussions on the economies of countries and the factors of production, and Libya is one of the countries in the Mediterranean basin most affected by the political changes that occurred after 2011, compared to countries in the basin such as Egypt, Syria, and Tunisia. The World Bank's report on finance, competitiveness, and innovation issued in February 2020 under the title "Review of the Financial Sector in Libya" warned that the political and security conflict in Libya has led to severe and serious damage to the Libyan economy, resulting from the control of oil sources and ports, causing a sharp decline in economic activities and a downturn. The Libyan economy is estimated to be growing at a rate of about 35% compared to 2010. The Libyan state and the Libyan parties must take serious decisions and measures to avoid the dangers arising from the political and security crisis and its economic and social effects. This research contributes at least to enriching the economic literature on this subject as well as informing policymakers in Libya and society about the importance of the impact of political stability and violence on the Libyan economy and future generations.

Research aim

The aim of this research is to study the impact of political stability and violence on the Libyan trade balance, which reflects the ability of the Libyan economy to achieve economic development and real growth in Libya. To achieve this goal, the paper used the Autoregressive Distributed Decelerated Time Lapse (ARDL) model technique for the period 1986–2017.

This paper came about to analysis the effects and economic concepts of the crisis that the Libyan economy is going through after 2011, focusing on the most important economic indicators and their repercussions on the general budget and the balance of payments. The paper deals with the post-2011 Libyan crisis, with undefined features as a result of the fact that armed conflicts, civil wars, and the political crisis and the resulting institutional division have not ended yet, and the longer the crisis lasts, the more complex it becomes and opens a wider field for the entry of forces and parties that were inactive, whether internally or externally, either directly or indirectly. Therefore, this paper contributes directly to enriching the economic literature on the economic effects of the Arab Renaissance on the tools of economic recovery in light of the scarcity or absence of Arab and foreign studies related to researching or studying the economic effects of the Arab Spring revolutions during 2011.

An Overview of the Economic Literature

The majority of economic research conclusively proves that there is a direct link between wars, military conflicts, political and security unrest, high levels of corruption, political disengagement, and low levels of national economic production. According to Ayasrah (2016), Haidar (2012), and Ansani and Daniele (2012), economic inequality, unemployment, inflation, the spread of poverty, and the concentration of wealth in the hands of a particular ruling class or with influential members of the ruling authorities are some of the most significant causes of the Arab Spring revolutions.

According to certain studies, wars alter consumer and producer behaviour, which in turn has a direct and immediate impact on the majority of national economic indicators and variables (Cohen, 2016). According to Collier (1999), who believes that this change in economic activity causes a sharp decline in the nation's productive activities, high unemployment rates, depreciation of the local currency, the emergence of the parallel market and shadow prices, and a decline in both domestic and foreign exports are all consequences. The security crisis makes the economy less appealing to foreign investments and capital flight outside of the nation, which has a significant negative impact on the nation's ability to accumulate capital flight outside the borders of the country, which results in a sharp decline in the accumulation of capital and thus a decline in gross domestic product and the emergence of what is known as economic stagnation. While Yang and Lester (1994) study demonstrates that armed conflicts necessitate an increase in the budget or government allocations for the army and defense and, as a result, cause an increase in the public expenditure index and, in turn, a decrease in the other components of the GDP, which has a negative impact on the GDP. The World Bank, the International Monetary Fund, as well as local data from central banks and regulatory and executive agencies in nations that have experienced armed conflicts or the Arab Spring, which unmistakably demonstrate the positive impact of periods of armed conflict on the

economic indicators of those countries, particularly GDP, unemployment, and price levels.

Considering what has already been said, it can be conclude that economic research has not yet given much attention to the effects of the Arab Spring on the economy of the nations that experienced it. It is obvious that more study and studies are needed to determine the precise timing of ending the political, security, and economic crises, resuming those countries' economic recovery, and enhancing their economic indicators. The Arab Spring had an impact on all Arab countries, but the effects varied from one nation to the next.

The question posed in this paper, with an effort to assess the influence of the Libyan Arab Spring and the ensuing armed conflicts and civil wars on the most significant indicators of the Libyan economy, is clarified by the principle of uncertainty. To do this, it is necessary to first provide a description of the most significant changes in economic variables since 2011, when a severe political, security, economic, violence and social crisis quickly developed.

An Overview of Macroeconomic Indicators in the Libyan Economy

When Libya declared its independence from the United States on December 24, 1951, it was one of the world's poorest nations due to its population of less than 1.5 million and 90% illiteracy rate. The Libyan economy started to revive after the first oil well was discovered with British government assistance in 1959 and the first oil exports from it began in 1963. (Aghayev, 2013). In their book "Gaddafi and the Libyan Revolution," published in 1978, Lycett and Blundy stated that, despite the inequality in wealth and income distribution, a Libyan citizen's personal income is higher than an English citizen, but lower than that of many other countries around the world (Aghayev, 2013). In spite of this, Libyans typically have higher living standards than their counterparts in Third World countries since they have access to free healthcare, free education, and opportunities to own a home, a car, and other things (Aghayev, 2013).

The most significant economic indicators in the Libyan economy for the two time periods before and after 2011 are invited for reading, discussion, and analysis. It was decided to compare the era from 2000 to 2010 to the period from 2011 to 2017 in order to more objectively analysis the economic characteristics and manifestations of the time prior to the Libyan Arab Spring, which saw a significant openness of the Libyan economy and some structural reforms. To further simplify the process, the average value of economic indicators or variables was calculated for each period separately and the rate of change between the two periods was calculated; the findings are shown in Table (1).

The Libyan state underwent significant changes in 2014, the most significant of which were the deterioration of the political situation, the administrative, financial, and political division of state institutions, and the country's entry into armed conflicts, which worsened the security situation and destroyed the infrastructure, forcing the closure of oil fields and export facilities in the eastern and western regions. With the drop in global oil prices, which reached $95.7 per barrel, and a decrease in Libyan oil production of 11.3% in 2014 compared to 2013, the amount of oil produced and exported dropped. This indicator confirms that there has been a decline, as seen in Table (1). In comparison to the average for the period from 2000 to 2010, the average

amount of oil produced from 2011 to 2017 amounted to roughly 56% on average, or more than half of the expected amount of output. In contrast, according to estimates from the International Monetary Fund for the year 2016, oil sector revenues account for generally more than 70% of the gross domestic product, 65% of the financing resources for the general budget, and more than 95% of all exports, which explains the sharp decline in the domestic product growth rate. The difference in the average rate of change between the two eras, which caused the personal GDP to drop to about 56%, was closely related to the real gross average between the two periods, which was roughly 61%.

The movement of business owners and the flight of capital outside the borders in search of a safe environment resulted in a sharp decline in the accumulation of capital relative to the gross domestic product as a result of the deterioration of the political and security conditions, which made the Libyan economy a repulsive and less attractive environment for foreign investments. The capital accumulation index, which also accounts for investment in R&D, shows a sharp fall, averaging just 21% between the two periods, indicating that Libya has not made any progress in any economic areas following the Libyan Arab Spring.

Considering the aforementioned, the value of the Libyan dinar is under the most pressure. The Libyan dinar suffered a severe decline in value in the parallel market, losing, on average, more than 220% of its value versus the US dollar over the two years. It is possible that the recent demands of public sector employees to increase the value of their wages and benefits to improve their living conditions, who make up about 40% of the workforce, are due to the sharp decline in the value of the Libyan dinar, which was directly reflected in the general level of prices, which rose on average between the two periods by roughly 233% of the population for the period from 2010 to 2017.

The table shows that, on average, the rate of change in the number of employees from Libya grew somewhat between the two periods, reaching about 10%. The public administration, defense, interior, and social security sectors employed the most people in 2014, according to the Central Bank of Libya's annual report. These sectors were followed by the education and health sectors, the rest of the economy, and the establishment of new institutions like the Libyan parliament and its supporting administrations. The increase in salary allocations and the like, which totaled about 24 billion during the average period from 2011 to 2017, despite the steps taken to restore the salary system and the like, can be attributed to a new general in addition to the Libyan National Congress, whose name changed to become the Supreme Council of the State after the Skhirat Agreement. Similarly, the minor decline in the unemployment rate, which brought its average change between the two periods to roughly 1%, was clearly represented by new appointments and employment contracts finalized throughout the period from 2011 to 2017. Regarding the general budget's performance in relation to the GDP, it experienced a severe deficit that averaged 380% between the two periods. This was brought on by the sharp decline in oil production and exports, the decline in GDP, the exodus of foreign investors, and the sharp decline in tax and customs revenues, which all contributed to the general budget's sharp decline in revenues. sources of funding for the overall budget, on the one hand. On the other hand, there has been an

increase in public spending, particularly on health and defense. As shown in Table 1, health spending as a percentage of GDP increased to 42%, with the majority of these costs coming from overseas medical care, while the average military spending increased by about 405%, placing the biggest strain on the overall budget.

Table (1) shows the most important economic indicators for the average of the two periods: (2000- 2010) and (2011- 2017)

Index	2000-2010 (1)	2011-2017 (2)	Changing rate (3) ((2-1)/1) *100)
Oil production	1,627.0	722.0	-56%
Real GDP growth	6.9	2.7	-61%
Gross domestic production per capita (GDP PP $)	25,512.00	11,181.00	-56%
Total investment (%of GDP)	34.64	27.40	-21%
Exchange rate (black market) *	1.37	4.39	220%
Inflation rate	3.9%	13.0%	233%
Total force	2,156,558.00	2,373,149.00	10%
Unemployment rate	19.01%	18.80%	-1%
Budget balance (in of GDP)	18.1	-50.7	-380%
Health expenditure (% of GDP)	3.24	4.59	42%
Military expenditure (current LD)	787,222,222.20	3,976,900,000.00	405%
Current account balance (%of GDP)	25.76	-14.07	-155%
Net income from abroad (current $)	363,130,685.90	161,789,299.50	-55%
Total reserves (including gold, current $)	53,502,760,388.00	105,233,083,867.40	97%
Net official development assistance and official aid received (current $)	22,790,000.00	244,998,000.00	975%
Political stability and absence of violence index	0.28	-1.99	-810.71
Refugee population	9,236.00	16,005.00	73%
Human development value (2007)	58 out of 177**	108 out of 180***	86%
Press freedom index (2007)	155 out of 169**	163 out of 180***	5%
Corruption perceptions index (2007)	131 out of 180**	171 out of 180***	31%

*Indicate to the exchange rate at black market, which calculated by author from media sources.

** indicate to the year 2007. *** indicate to the year 2017.

Numbers listed in the table calculated by author from different sources, such as:

- International Monetary Fund, *World Economic Outlook Database (WEO), IMF, October 2018*.
- World Bank, World Development Indicators, 17/04/2017.
- CIA, World Factbook-Libya, Central Intelligence Agency, February 2014, Retrieved 5 March 2014.
- CIA, World Factbook-Libya, Central Intelligence Agency. Retrieved 5 May2018.
- World bank, Ease of Doing Business in Libya, Retrieved 2017-11-29.
- FAOSTAT (2022), Food and Agriculture Organization of the United Nations.

The current account as a percentage of GDP showed a notable change on average between the two periods, bringing the burden on it to about 155%, which is attributed to the sharp decline in the growth of GDP, goods for export, and exports. As a result, the balance of payments was not sufficiently resilient to withstand the aforementioned challenges. The substantial internal demand for imported commodities to satisfy market demands, and the expanding practice of smuggling various goods and services over international borders. The net income from abroad index measures the difference between what Libyan nationals and local businesses accomplish overseas and what foreign nationals and businesses operating in Libya accomplish. The net income from abroad decreased, on average, by more than half, or

roughly 55%, as a result of the worsening conditions, the departure of foreign nationals and foreign businesses operating in Libya after the Libyan Arab Spring, and the cessation of remittance services and foreign financial exchanges (such as Western Union and Money Gram companies) in the Libyan Central Bank. On the other hand, due to the Central Bank's other policies, which include not overly depending on withdrawals from international reserves to finance public debt or imports of essential goods and services, the change in international reserves with the Central Bank of Libya increased on average between the two periods by about 97%, a high percentage. The Libyan Central Bank has implemented austerity measures since mid-2014. Regarding signs of economic inequality, Libya experienced an increase in reliance on international organizations following the Libyan Arab Spring and between 2011 and 2017, when it came to funding some fundamental projects and providing some humanitarian supplies, such as equipment, training, and others. The rate of change in foreign aid between the two decades averaged 975 percent. With regard to the devastation of infrastructure, the displaced, political participation, governance, border security, and illegal immigration, this indicator shows how terrible the humanitarian situation is in Libya following the Arab Spring. A new phase of political instability and an increase in violence resulted from the Arab uprising and its extension to Libya's intervention. The political stability and violence index, which had averaged about 0.28 for the years 2000 to 2010 reached low levels for the years 2011 to 2017, i.e., about (-1.99), indicating a rise in the intensity of political conflict and high levels of violence in Libya. The average rate of change over the two periods reached a very dangerous rate of about -810.71, which proves beyond a shadow of a doubt that the political and institutional division and the subsequent transitional governments have not made any significant progress in the file of political stability and lowering the pace of violence. Regarding signs of economic inequality, Libya experienced an increase in reliance on international organizations following the Libyan Arab Spring and between 2011 and 2017, when it came to funding some fundamental projects and providing some humanitarian supplies, such as equipment, training, and others. The rate of change in foreign aid between the two decades averaged 975 percent. The number of Libyans seeking political or humanitarian asylum surged as a result of changes in the country's humanitarian, security, economic, and political issues, resulting in an average shift of 73% in the refugee index for Libya between the two years. Despite having the security, political stability, and economic resources required for human development, as well as after the start of the Libyan Arab Spring and what was previously stated, as well as the failure to adopt successive transitional governments from 2011 to 2017, the human development index also shows that Libya in 2007 ranked 58 out of 177 countries. Any indicated development initiatives with Libya placing 108 out of 180 nations in 2017, this indicator reached its lowest point. From 2007 to 2017, there was an average decline of roughly 86%. While there was no discernible progress in the Media and Press Freedom Index between 2007 and 2017, Reporters Without Borders (RSF), a French organization that monitors media and press freedom, ranked Libya in 2017. The worst performing nations were ranked 155 out of 169 nations in 2016 and 163 out of 180 nations in 2017, a very minor decline rate that averaged 5% during the

aforementioned years. On the other hand, nepotism, mediation, and administrative corruption are still pervasive in Libya's public sector. Out of 180 nations, Libya was placed 131 in the Corruption Index in 2017. Libya ranked 171 out of 180 nations in 2017, with a 31% average annual change between 2007 and 2017. This indicates that the public sector position deteriorated in 2017. It shows unequivocally that there hasn't been much development due to the political and institutional fragmentation, the succession of transitional governments, the absence of plans for reorganizing state governmental institutions, and the public sector.

Generally speaking, even though the majority of economic indicators point to Libya's political, economic, and social conditions getting worse after 2011, the country has the financial (international reserves), natural (crude oil, natural gas, geographic location, etc.), and human resources to rebuild itself in a snap if the parties can come to an understanding regarding the significance of the homeland.

Data and Methodology

It is possible to formulate a theoretical and practical basis through which the relationship between political stability, violence, and the trade balance can be formulated, based on the studies of Jaouni et. al. (2013) and Mousawi (2016) of the general equilibrium identity between aggregate demand and aggregate supply.

The balance between the internal and external sectors represented by the balance of payments and the general budget is referred to as the "general balance" in this essay. The global equilibrium can be expressed as follows:

$$(EX - IM) = (S - I) + (GR - GX) \dots\dots\dots\dots\dots (1)$$

The amount (EX-IM) represents the difference between exports of goods and services, and imports of goods and services, which is what is known as the status or balance of the trade balance. The balance of the trade suffers from an imbalance (deficit or surplus).

As for the amount (S-I), it represents the difference between saving and private investment, or what is known as the net resources of the private sector, which depends mainly, in light of the abolition of interest rates in the Libyan economy, on investment expenditures, whether private or government.

As for the amount (GR-GX), it represents the total government revenues minus its total expenditures, which is what is known as the general budget balance.

Through the identical formula (1), it is evident that the balance or position of the trade balance is the sum of the balance of the general budget with the balance of the resources of the private sector, and in light of the lack of diversification of the Libyan economy and the absence of the role of the private sector in economic development, the largest role in influencing the balance of the trade balance is attributed to the balance of the general budget. Taking into account the aforementioned, the standard function of the trade balance, which explains the relationship of political stability and violence to the trade balance, can be formulated as follows:

$$LCA_t = \propto_0 + \propto_1 LPOL_t + \propto_2 LGDPP_t + \propto_3 LGX_t + \propto_4 LGR_t + \propto_5 LEXCH_t + \propto_6 LIFL_t + \varepsilon_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

whereas:

CA: Refers to the net trade balance, which is calculated based on the difference between exports of goods and services and imports of goods and services.

POL: Political stability and violence index variable, which is used to capture the impact of political and insecurity on the development of clear policies and strategies for the government to adapt to political, economic, and social changes, as well as to indicate the impact of political stability and violence on the trade balance. So far, in the event of popular revolutions and the accompanying protests, a state of confusion among the ruling authorities, the transitional phase that the state is going through, and an attempt to provide reassurances, whether to the public or economic actors (local and international partners). The authorities usually follow expansionary policies by expanding public government spending due to the inability of the state to collect sufficient revenues, especially in the stage of economic decline accompanying the revolution or protests, especially since the goal is to get out of this stage. Due to the high risk of keeping the local currency, economic actors will reduce their economic activities and balances in the local currency and will seek more reliable and safe currencies, increasing the proportion of their balances in foreign currency or precious metals. According to the monetary model, this will be reflected in the deterioration of the value of the local currency, which results in an inflationary wave, and under the principle of currency substitution, local monetary growth expectations will lead to a greater impact on the equilibrium exchange rate, which is reflected in the form of a deterioration in the trade balance and the depletion of the international reserves of the monetary authority. Similarly, in light of the country's wars and political and institutional divisions, which were reflected in increased demand for imports, particularly of weapons, war equipment, and final consumer goods, and the accompanying expansion of public spending, particularly military and health expenditures, as shown in Table (1), It also negatively affects the trade balance, in light of the decline in oil exports, as a result of either the closure of oil fields and export ports at times or because the oil is located in areas of conflict or smuggled across borders, especially since its price and the quantity of its production are determined by external rather than internal factors. The index is normalized from minimum to maximum, which interpreted such that the closer the index is to maximum, the lower the instability is. When the index value is close to minimum, it suggests a situation of strong instability and violence. Therefore, we expect the political stability and violence variable to have a positive relationship with the trade balance ($\propto_1 > 0$).

$GDPP$: Refers to per capita GDP at constant prices, which is a variable used in the model to measure market size or domestic market demand. According to economic theory, an increase in market size increases total demand for goods and services, which is reflected in an increase in demand for imported goods, whether final or intermediate, and given that the Libyan economy is an economy that depends on imported goods and services for consumption and production, we expect an increase in market size to increase total demand for goods and services. The size of the market increases aggregate demand, and then the demand for imports increases. Assuming the stability or decline in demand for exports, the final result will be a deficit in the trade balance ($\propto_2 < 0$).

GX: Refers to total public expenditures. This variable is used to measure the impact of expansionary of economic policies. According to economic theory, with an increase in public spending, the total demand for goods and services increases as a result of the government multiplier mechanism, and given that the Libyan economy is a net importer of all goods and services, We expect an increase in public spending to increase the demand for imports, and assuming that the demand for exports (which is considered an external variable) either decreases or remains constant, the final result is a deficit in the trade balance ($\propto_3 < 0$).

GR: Refers to total public revenues. This variable is used to measure the impact of deflationary of economic policies. Increasing public revenues requires imposing higher customs duties or increasing them, imposing or raising tax fees on wages, whether for the public or private sector, or increasing the share of financing oil revenues for the public budget. According to economic theory, an increase in public revenues will lead to a decrease in the total demand for imported goods and services as a result of their higher prices, either as a result of imposing new tax fees or raising the existing ones. The net result is a surplus or improvement in the trade balance ($\propto_4 > 0$).

$EXCH$: Refers to the nominal exchange rate for the average period and was used to measure the effect of exchange rate changes on the trade balance. As economic theory assumes (especially the monetary model), a rise in the exchange rate of a foreign currency against the local currency of a country often leads to a decrease in the relative prices of its commodities, which may result in an increase in its exports to foreign markets. On the other hand, an increase in the exchange rate for the foreign currency against the local currency of that country leads to a relative rise in the prices of the commodities supplied to it and thus a decrease in the domestic demand for them, which is reflected in the form of a surplus or an improvement in its trade balance, and vice versa if the exchange rate of the foreign currency decreases in relation to the local currency. Assuming that Libyan exports depend mainly on extractive industries with internationally set prices and its lack of an industrial base that enables it to expand and diversify exports, we expect that the rise in foreign exchange rates will be positively linked to the status of the trade balance and that its impact will be clear in the short term.

IFL: Refers to inflation rate. This indicator is used as an indicator to measure the impact of the parallel market on the trade balance situation. The inflation rate calculated based on the consumer price index will be used because it includes the price index for a group of commodities and foodstuffs. It can represent the deterioration in the purchasing power of money or the standard of living of individuals. Based on the monetary approach, a rise or increase in the rate of inflation means a further deterioration or depreciation in the value of the local currency, which affects prices in the form of an increase in the prices of imported goods, and the result is immediate when the import is concentrated on final consumables. The rise in the prices of imported commodities means an increase in the value of imported commodities and services, which is reflected negatively on the trade balance in light of the inflexibility of the productive apparatus and the concentration of exports in extractive products (oil and gas). Therefore, we expect the inflation rate to have an inverse relationship with the trade balance.

ε: refers to the random variable, which is assumed to have a normal distribution with an independent mean equal to zero and a constant variance.
L: denotes the natural logarithm and was introduced to the variables to avoid some statistical issues that may arise during model measurement, such as the problem of linear participation (removing the correlation between independent variables and random errors) and heterogeneity (the severity of the variance difference) between the time series of the model variables, and transforming the distribution of the time series in a general direction from exponential.
t: denotes time.

Table (2) shows the names of the variables and data sources

Variable name	acronym	Data sources
Net trade balance	CA	EX-IM
Exports from goods and services	EX	World bank, world development indicators
Imports from goods and services	IM	World bank, world development indicators
Political stability and violence index	POL	FAOSTAT
Constant Gross national production per capita	GDPP	World bank, world development indicators
Total government expenditure	GX	World bank, world development indicators
Total government revenue	GR	World bank, world development indicators
Exchange rate	EXCH	FAOSTAT
Consumer price index (2010=100)	IFL	World bank, world development indicators

This paper adopted the ARDL method, which gives consistent estimates of the difference in the degree of cointegration between the dependent variable and the independent variables in the regression model and the possibility of applying the ARDL model in the case of a small sample size, as well as explanations for the changes that occur in the dependent variable in the short and long term. On the other hand, before confirming the use of the ARDL methodology, the data will be statistically examined and its characteristics analysed, using the basic tests of the model to ensure that it adequately meets the basic assumptions of applying the ARDL methodology.

Results of assessment and discussion

By analysing the characteristics of the time series, the results of the unit root test in Table (3) show that the time series differs in the degree of its stability. The dependent variable (LCA) is stable at level (I(0)), while the rest of the variables are integrated with the same degree of integration (I(I)). The results of the unit root analysis indicate that the series of variables used did not meet the condition of stability at the same level, which is This fulfils the condition of applying the Autoregressive Distributed Decelerated Time Lags (ARDL) model.

Table (3) indicates the results of the unit root test (Phillips-Perron (PP)) for variables in the level of the proposed model for the period 1986–2017.

UNIT ROOT TEST TABLE (PP)								
At Level		LCA	LGDPP	LPOL	LGX	LGR	LEXCH	LIFL
With Cons	ts	-3.373	-1.180	0.365	-0.906	-1.929	-1.364	1.114
	Pro	***0.0212***	***0.6682***	***0.9774***	***0.7708***	***0.3150***	***0.5845***	***0.9966***
		**	n0	n0	n0	n0	n0	n0
With Cons & Trend	ts	-3.367	-2.131	-1.308	-2.376	-2.733	-1.224	0.0202
	Pro	***0.0771***	***0.5065***	***0.8642***	***0.3825***	***0.2322***	***0.8849***	***0.9944***
		*	n0	n0	n0	n0	n0	n0
Without Cons & Trend	ts	-4.173	-0.976	-1.643	0.648	0.397	-1.951	2.391
	Pro	***0.0149***	***0.2862***	***0.0938***	***0.8500***	***0.7912***	***0.0503***	***0.9945***
		**	n0	*	n0	n0	*	n0
At Difference	**First**	d(LCA)	d(LGDPP)	d(LPOL)	d(LGX)	d(LGR)	d(LEXCH)	d(LIFL)
With Cons	ts	-10.31	-6.625	-4.044	-3.710	-6.539	-4.090	-4.377
	Pro	***0.0000***	***0.0000***	***0.0046***	***0.0100***	***0.0000***	***0.0041***	**0.0602**
		***	***	***	**	***	***	*
With Cons & Trend	ts	-10.33	-6.743	-4.173	-3.488	-6.457	-4.218	-8.283
	Pro b	***0.0000***	***0.0000***	***0.0149***	***0.0617***	***0.0001***	***0.0135***	**0.0125**
		***	***	**	*	***	**	**
Without Cons & Trend	ts	-10.62	-6.401	-3.518	-3.706	-6.413	-3.650	-5.401
	Pro	***0.0000***	***0.0000***	***0.0011***	***0.0007***	***0.0000***	***0.0008***	**0.0117**
		***	***	***	***	***	***	**
Notes: (*) Significant at the 10%; (**) Significant at the 5%; (***) Significant at the 1%. and (no) Not Significant								

Table (4) shows the statistical summary of the F-bounds tests for the limits of critical values at the various degrees of significance suggested by Pesaran. The results indicate that the value of the F-statistic, the co-

integration statistic, which is equal to 8.392, is greater than the upper limit of the critical values at different levels of significance, which indicates the existence of a co-integration relationship or a long-term equilibrium relationship between the trade balance variable and the used independent variables in the standard form.

Table (4) Results of the F-statistics and F-bounds test of the ARDL model for the period 1986–2017

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	8.392147	10%	1.99	2.94
K	6	5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99

Depending on the Schwarz criterion (SIC) test, the best model for testing the cointegration relationship and estimating the ARDL autoregressive model is as follows: (ARDL (1,0,0,2,1,1,0)).
To discuss the results, we will first explain the results of the short term, then the results of estimating the ARDL model in the long term, and then review the analysis of the statistical diagnostic tests of the model.

Short term results:

Table (5) shows the parameters for estimating the ARDL model in the short term, as the results indicate that the independent variables can explain about 89% of the changes that occur in the trade balance. The results also indicate that the error correction coefficient (CointEq (-1)) is statistically significant, with a significant degree of up to 1%, and has a negative sign. This result confirms the existence of an equilibrium relationship from the short term to the long term at a rate of convergence of about 149% annually, which was confirmed by the statistical F-bounds tests. All the estimated short-term parameters were statistically significant, with a significance level of 1%.

Table (5) Short-term results of estimating the model for the period (1986-2017)

ARDL Error Correction Regression				
Dependent Variable: D(LCA)		Selected Model: ARDL ,2 ,0 ,0 ,1) (0 ,1 ,1		
Case 2: Restricted Constant and No Trend				
Sample: 1986 2017		Included observations: 22		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LGX)	-0.033857	0.24149	-0.1402	0.8905
D(LGX(-1))	-1.55826	0.26686	-5.83933	0.0000
D(LGR)	1.21557	0.25112	4.84062	0.0003
D(LEXCH)	-1.71424	0.40166	-4.26791	0.0008
CointEq(-1)	-1.48743	0.11703	-12.7095	0.0000
R-squared	0.906188	Mean dependent var		0.003829
Adjusted R-squared	0.888319	S.D. dependent var		0.822274

What is noted from the table and of importance is that the growth or changes in the trade balance in the short term can be explained by the growth or changes in public spending, public revenues, and the exchange rate of the Libyan dinar against the US dollar. As for the political stability and violence variable (POL), the subject of the paper, it did not have an important role in explaining the changes that occur in the trade balance in the short term, according to the results of the model estimation using the ARDL methodology.

Long term results:

Table (6) shows the parameters for estimating the ARDL model in the long term for the independent variables. All the model variables carried the expected signal and had significant statistical significance up to a significant degree of 1%, except for the variable of the exchange rate of the Libyan

dinar against the US dollar, which was significant with a degree of freedom of up to 1% to 5%. Table (6) shows that an increase in personal gross domestic product (GDPP), as a variable that expresses the size of the domestic market, is inversely related to the trade balance and that an expansion in the size of the domestic market by 1% will lead to an increase in the imbalance or depletion of the trade balance by about 157%, which is a very large percentage compared to other variables, which can be explained by the fact that the size of the local market is a very small market that is affected by the global markets and is not affected by them. While the coefficient of the political stability and violence (POL) variable is as expected. High political stability and minimizing the rate of violence, by 1% will lead to improvement of the trade balance by 69%.

For the variable total government spending (GX), it is inversely related to the status of the trade balance, and an expansion of total government spending by 1% will lead to an increase in the imbalance or a depletion of the balance of trade by 92%. While the government gross revenue variable (GR) is positively related to the trade balance, an increase in total government revenues by 1% will support or correct the trade balance by 53%. while the exchange rate variable and the inflation variable were inversely related to the trade balance, which indicates that the continued devaluation of the Libyan dinar against the US dollar by 1% will lead to an increase in the imbalance or depletion of the trade balance by 63%. While a 1% increase in inflation rates results in a 167% disruption or depletion of the trade balance. In the last rows of Table (6), we notice that the series of residuals are distributed normally, as indicated by the "Normality Test for Jarque-Bera" as well as the "Breusch-Godfrey" test, confirming that there is no problem of serial linear correlation of the series of residuals, while the "Arch" test indicates the constancy of contrast. Also, the Ramsey Reset test to identify the suitability of the model design in terms of the functional form of the proposed model indicates that there is no problem of inappropriateness of the functional form of the model, and thus the conditions for applying the ARDL model are met according to the proposed model to measure the relationship between the trade balance, political stability, and violence, in addition to a number of macroeconomic variables associated with the trade balance function according to economic theory.

Table (6) The long-term results of estimating the model for the period (1986-2017)

Levels Equation				
Dependent Variable: LCA		Selected Model: ARDL (1, 0, 0, 2, 1, 1, 0)		
Case 2: Restricted Constant and No Trend				
Sample: 1986 2017		Included observations: 22		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGDPP	-1.568305	0.3831	-4.09347	0.0011
LPOL	0.691874	0.2156	3.20977	0.0068
LGX	-0.922446	0.1760	-5.24209	0.0012
LGR	0.533027	0.1556	3.42585	0.0045
LEXCH	-0.630882	0.2836	-2.22449	0.0431
LIFL	-1.668341	0.4699	-3.55059	0.0032
C	-19.40034	4.4117	-4.39747	0.0006
Normality test (Jarque-	1.011587	Prob.	0.6030	
Serial Correlation LM test (Breusch-Godfrey)	F-statistic	2.365971	Prob. F (2,11)	0.1398
	Obs*R-squared	7.820427	Prob. Chi-Square (2)	0.5683
Heterosced asticity Test: ARCH	F-statistic	0.105139	Prob. F (1,23)	0.7487
	Obs*R-squared	0.113761	Prob. Chi-Square	0.7359
Ramsey Reset Test	t-statistics	3.883974	Prob. df (13)	0.0019
	F-statistics	15.08525	Prob. df (1, 13)	0.0019

In general, the results of the estimation of the trade balance function indicate the relative importance of the variable of political stability and violence in explaining the changes that occur in the trade balance and, thus, the ability of the Libyan economy to meet the needs and requirements of real economic development.

Conclusion and implications for the Libyan economy

This study aims to trace the impact of political stability and violence on the Libyan economy's trade balance. To achieve this goal, a standard model was built based on the general economic balance identity (the balance between the internal sector represented by the general budget and the external sector represented by the balance of payments). To measure this relationship, the net trade balance was used as a dependent variable. As for the items of the general budget (total government revenues and expenditures), in addition to the gross domestic product per capita and the variable of the political stability and violence index that reflects the deterioration of the political and security conditions after 2011, and in addition to other economic variables such as the inflation rate and exchange rates of the Libyan dinar against the dollar, as independent variables for the period from 1986 to 2017. One of the most important findings of the paper, through the applying the ARDL methodology, is that security and political instability, armed conflicts, and the rise in violence, especially after the Arab Spring, are expressed in the variable of political stability and violence, which clearly indicates low indicators of economic sufficiency in a way that does not serve Libyan economy. the state's economic system and often hinders the application of economic policy tools to achieve general economic balance. Political stability and violence have a very strong and positive relationship with trade balance, which supports this. In general, the deterioration of the political, security, and social conditions, armed conflicts, institutional division, the transitional period and its extension, and the increase in military and government consumer spending do not lead to an improvement in the economic environment of Libya, and their results are impeding the implementation and application of economic recovery tools to reach economic well-being. The Libyan parties must take into account the consequences of political and security instability on the future of the Libyan economy.

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