Gasoline price gap between Libya and Tunisia
فجوة سعر البنزين بين ليبيا وتونس
خلال الفترة (2009–2022)

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Abstract

This study aims to explain the real gasoline price difference between Libya and Tunisia employing the black-market exchange rate between the two countries during 2009-2022. The study found a high level of subsidy of the gasoline price in Libya compared to the global average price which reached about 97.65% of the global gasoline price in October 2022. There is also a vast difference between gasoline price in Libya and Tunisia according to PPP assumption by considering the black-market exchange rates between the two countries. It reached approximately 36.60, 27.44 times (regardless of transportation costs) in January 2018 and November 2022 respectively. The Libyan authority should be aware of the loss of the country's money through smuggling massive quantities of gasoline daily from Libya to Tunisia.

Key words: Gasoline price, subsidy, purchasing power parity, Libya.

الملخص

هدفت هذه الدراسة لتوضيح سعر البنزين الحقيقي بين ليبيا و تونس باستخدام سعر صرف السوق السوداء للعملات الاجنبية بين البلدين خلال الفترة 2009–2022. وجدت الدراسة مستوى دعم مرتفع للغاية لسعر البنزين الليبي مقارنة بمتوسط اسعار البنزين العالمية، حيث مثل الدعم الليبي للبنزين حوالي 97.65% كنسبة من متوسط سعر البنزين العالمي في اكتوبر 2022. النتيجة المهمة الاخرى هي هناك فرق شاسع بين سعر البنزين الحقيقي في ليبيا وسعره في تونس وفق حسابات فرضية تعادل القوة الشرائية من خلال اعتماد أسعار الصرف في السوق السوداء بين البلدين. لقد بلغت نحو 36.60 و27.44 مرة (بغض النظر عن تكاليف النقل) في يناير 2018 و نوفمبر 2022 على التوالي. ينبغي أن تدرك السلطات

في ليبيا خسارة أموال الدولة الليبية من خلال تهريب كميات ضخمة من البنزين يوميا من ليبيا إلى تونس خاصة و أن دولة تونس زادت اسعار البنزين في نوفمبر 2022 بشكل كبير جدا الامر الذي يشجع على تهريب كميات كبيرة من البنزين يوميا من ليبيا إلى تونس.

الكلمات المفتاحية: سعر البنزين، الدعم، تعادل القوة الشرائية،ليبيا.

1.Introduction:

Libya as the largest oil exporting- country in North Africa, significantly subsidizes gasoline prices in order to support the low-income Libyan people. On the other hand, after Libyan revolution in 2011, this support has become a heavy burden on the state budget. Since then, the Libyan government has faced necessity of subsidy reform in a very complex political and social environment. Gasoline subsidy funds do not fulfil their main purpose because they have been exploited by some people in smuggling operations outside the country, particularly after the large benefit from the price of black-market exchange rates which makes a large real difference in gasoline prices. The research problem lies in the fact that Libya subsidizes gasoline significantly, as the average global price of gasoline reached 1.28$ in October 2022, while in Libya just 0.03$. This means that Libya supporting gasoline by about 97.65% on average in October 2022.

Table (1): Average gasoline price subsidy in Libya

Years	Pump Average World Gasoline Price ($) (Per one litter)	Pump Libyan Gasoline Price ($) (Per one litter)	%	Libyan subsidy (on Average %)
2010	1.22$	0.148$	12.13%	87.87%
2012	1.41 $	0.115$	8.16%	91.84%
2016	0.97 $	0.025$	2.58%	97.42%
2022[1]	1.28 $	0.03$	2.34%	97.65%

Source: world bank data and fuel prices data

In recent years, the black-market exchange rate has appeared at a high level, particularly in the years 2016, 2017, and 2018. Consequently, the smuggling activity for this commodity has been active, particularly to Tunisia, considering the rise in gasoline prices in Tunisia and the depreciation of the Libyan currency against the Tunisian currency on the black market. Therefore, the basic hypothesis in this research is that, the price of gasoline in Libya deviates significantly from the price in Tunisia according to PPP theory. Then, the main objective of this research is to unify the prices of gasoline at the same currency between the two countries employing the PPP assumption to obtain the real difference between

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(1) Data for 2022 up to the beginning of October of this year.

them. This will assist to determine the size of the real difference in the gasoline prices during 2009 to 2022, focusing on successive increases in gasoline prices in Tunisia recently, which in turn deepens the size of the gap between the two countries. The importance of this work comes in knowing the real price of gasoline through PPP assumption to stand in front of the size of the gap between Libya and Tunisia. Obviously, studying such issues and highlighting them will benefit decision-makers in Libya in order to take appropriate economic policies to prevent the depletion of this internationally high-priced commodity.

This work is divided to five parts. Secondly comes to review the most important previous studies that tried to study the gasoline subsidy. The methodology is explained in the third part of this research as well as data sources. Fourth part comes to measure the size of the price of gasoline gap between Libya and Tunisia employing the black-market exchange rate between the two countries. In the last part, the most important results mentioned, as well as some recommendations that may improve the gasoline prices policy in Libya.

2. Literature Review:

Whitworth (2017) studied subsiding energy in Libya. This paper focuses on the fact that Libya highly subsidizes consuming energy. This paper found that, subsidy is not purely supporting and protect poor people, it damages the environment and helps the smugglers to be rich fast. The country needs to reform fuel subsidies by replacing it with cash transfers which may assist citizens to be in a good condition financially.

Araar and Choueiri (2017) focused on subsidy reforms in Libya before and after the Libyan revolution in 2011. The results show that subsidy reforms will have a significant impact on household welfare and government revenue. Removing fuel subsidies would reduce household spending by about 10 percent and double the poverty rate, while saving the equivalent of about 2 percent of the government budget. It will also have a similar impact on household well-being, but it will have a greater impact on poverty while government savings will make up about 4 percent of the budget. The scale of these effects, weak market institutions, and the current political instability make subsidy reforms extremely complex in Libya. It is also clear that, subsidy reforms will require some form of compensation for poor people, a piecemeal rather than a big bang approach, and a sequencing of product-by-product reforms rather than a blanket reform.

Zaptia (2013) studied energy subsidy reform on 22 countries. Such subsidies are intended to protect the consumer, such subsidies exacerbate fiscal imbalances or crowd out priority public spending and reduce private investment. It also reduces the benefits of a positive balance of payments in relation to oil-exporting countries. They distort resource allocation, encourage excessive energy

consumption, reduce incentives to invest in renewable energy, and accelerate the depletion of natural resources.

Adagunodo (2021) assessed the impact of oil revenues and fuel subsidy payments on current account deficits in Nigeria and Venezuela. The collected data were analysed using trend analyses, unit root, co-integration techniques, and delayed distributed autoregression (ARDL). The result showed that the estimated oil revenues had a negative and significant effect on the short-run current account deficit in Nigeria and Venezuela. Estimated oil revenues had a negative and significant effect on the long-run current account deficit in Nigeria and Venezuela fuel subsidies were also positive and significant. The study concluded that despite the positive contributions of oil revenue to the current account in the two countries, continued payment of fuel subsidies would impose significant financial costs and undermine the current account position in Venezuela more than in Nigeria.

By reviewing some previous studies on fuel subsidy, it is noticed that opinions were mixed about fuel subsidy. There are some who see replacing it with a cash alternative. Also, in some other studies, it was emphasized that excessive subsidies for energy consumption will cause a bad allocation of resources and deficit in balance of payments.

3. Methodology and Data:

The methodology depends on the time series in order to calculate the real price of gasoline between Libya and Tunisia based on the purchasing power parity method, considering the price of gasoline in Libya and Tunisia and the exchange rate of the Libyan dinar against the Tunisian dinar in the black-market exchange rate. The PPP value can be calculated as (Magyari 2008):

$$PPP = P^*/P$$

Where:
PPP: Purchasing power parity. P^*: Foreign gasoline price (Tunisian gasoline price). P: Local gasoline price (Libyan gasoline price).

But:
By considering the nominal exchange rate between the two countries, this formula will be:

PPP = Ex. [Gasoline price in Tunisia / Gasoline price in Libya]

Where:
Ex: the exchange rate between Libya and Tunisia as units of Libyan currency per one unit of Tunisian currency). This study will use the black-market exchange rate between the two countries.

If:

PPP>1 Gasoline price in Libya is undervalued.
PPP<1 Gasoline price in Libya is overvalued.
PPP=1 Gasoline price in Libya is equilibrium.

When we use another definition of exchange rate the formula will change to:

PPP = Ex. [Gasoline price in Lib/Gasoline price in Tun]

Where:

Ex: the exchange rate between Libya and Tunisia as units of Tunisian currency per one unit of Libyan currency).

If:

PPP>1 Gasoline price in Libya is overvalued.
PPP<1 Gasoline price in Libya is undervalued.
PPP=1 Gasoline price in Libya is equilibrium.

After calculating PPP value, we can compare this value with the equilibrium level 1 to measure the deviation from the equilibrium path. Data sources in this work are obtained for World Bank data and Fuel Prices data. The exchange rate in the parallel market between Libya and Tunisia witnessed a remarkable increase after the February revolution in 2011. The exchange rates increased significantly to reached more than 3LYDs/1TNDs in 2018. After 2018, the exchange rate between the two countries decreased after the oil exports rise in Libya to be in November 2022 just 1.63 LYDs/1TNDs as shown in figure 1.

**Figure 1. Exchange rate between Libya and Tunisia
in the black-market (2009-2022).**

(Units of Libyan dinar per 1 unit of Tunisian dinar)
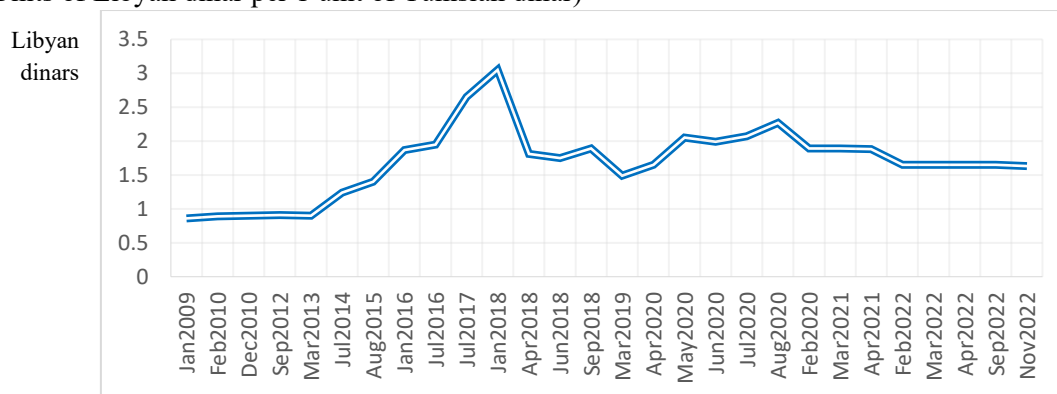
Sources: Alssaeel, Facebook page (annual average prices) and records of gold shops in Tripoli.

As for gasoline price in Tunisia, it witnessed continuous increase[1], as shown in figure 2. At the same time, the Libyan gasoline prices almost remained constant at a low-price compared to global prices, just 0.15 LYD per one litter, as shown in figure 3.

Figure 2. Gasoline prices in Tunisia (per one litter) by Tunisian dinar from (Jan2009 to Nov2022).
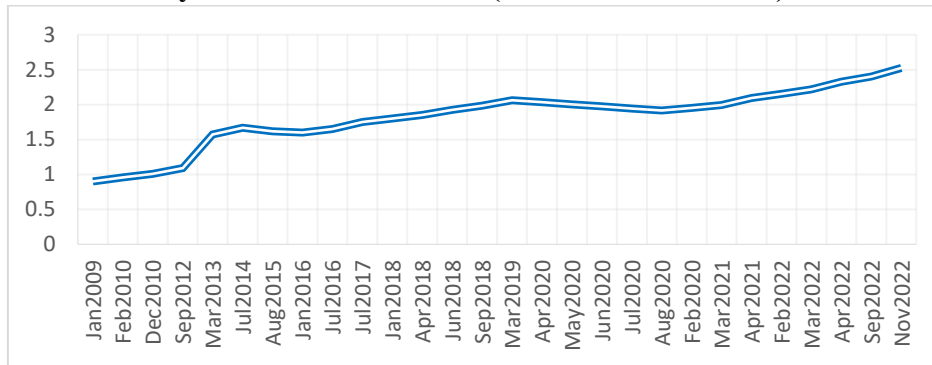
Source: fuel prices data.

Figure 2- Gasoline prices in Libya (per one litter) by Libyan dinar from (Jan2009 to Nov2022).
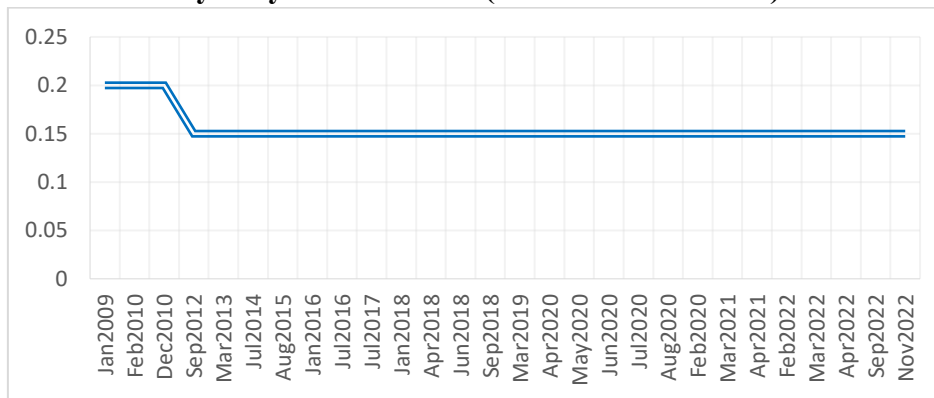

Source: fuel prices data.

4.Measurements and Results Analysis:

In this part, the measurement of real gasoline price between Libya and Tunisia will be achieved. The measurement will depend on black market exchange rate as units of Libyan currency per one unit of Tunisian currency. Through the measurements that were calculated, there were high differences in gasoline prices between Libya and Tunisia. The PPP value was not at a high level in 2009 and 2010, but after that, the value increased sharply to teach 30.36 times in January 2018 due to the rise in the black-market exchange rates foe foreign currencies in Libya. Noticeably, the PPP value slightly went down due to the decline in black-market exchange rate for one unit of the Libya dinars against the foreign currencies. Recently the value has increased notably despite the stability in the

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2. The super gasoline prices in Tunisia reached 2.855 TNDs per one litter on 24 November 2022.

exchange rates in the black-market due to the continuous increase in gasoline prices in Tunisia as represented in figure 4.

Figure 4. Purchasing power parity value of the gasoline price between Libya and Tunisia (2009-2022).
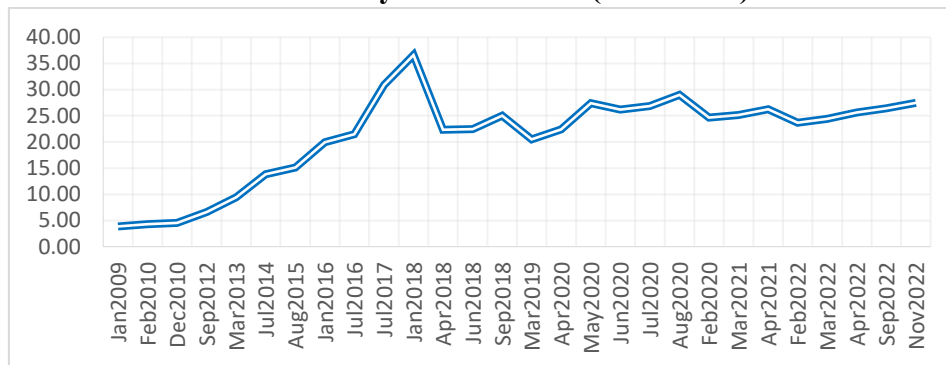
Source: Author's work.

5. Conclusion:

This paper reached a significant result which is, the value of subsidizing the price of gasoline in Libya compared to the global price has become very large, and the public budget may not be able to afford that in the next few years. Likewise, continuing to subsidize gasoline in Libya in conjunction with the rise in gasoline prices in Tunisia, particularly with the Libyan currency depreciation encourages to increase the daily smuggling of gasoline from Libya to Tunisia. Tunisia is continuing to increase the gasoline price causing the PPP value may will be greater and greater, and this in turn contributes to increase smuggling activities in large quantities. Libyan authorities should adjust the price immediately and compensate the Libyans with a cash money to stop smuggling of this high-prices commodity globally.

6. References:

1- Adagunodo, M. (2022). The Effect of Oil Receipts and Fuel Subsidy Payment on the Current Account Deficit in Nigeria and Venezuela. Annals of Spiru Haret University. Economic Series, 22(1), 137-152.

2- Araar, Abdelkrim, Choueiri, Nada and Verme, Paolo (2015), 'The Quest for Subsidy Reforms in Libya', Policy Research Working Paper 7225, World Bank, Washington, DC.

3- Magyari, I. (2008). Exploring the Correlation between Real Exchange Rate Misalignment and Economic Growth in the CEE Countries. Advances in Economic and Financial Research-DOFIN Working Paper Series 16.

4- Records of gold shops in Tripoli.   T

5- Sami Zaptia (2013). Washington DC, 17 April 2013: The IMF report based on a 22 country-case study of energy subsidy

6- Whitworth, Alan (2017), Why Libya Should Stop Subsidising Energy.
   Libya Development Digest Policy Paper No. 2, UN Libya.

- Electronic Websites:

1. Assaeel, facebook page, [Alssaeel, Facebook](#)
2. Fuel prices database, https://thefuelprice.com/Feg/en
3. World Bank database, https://data.worldbank.org

7. Appendix

Calculating PPP vale of the gasoline prices between Libya and Tunisia.

Date	Gasoline price (Tunisia) (TNDs)	Gasoline price (Libya) (LYDs)	Ex Rate (black market) LYDs for 1TND	Real Price by (LYDs)	(PPP) value	State
15Jan/2009	0.90	0.2	0.88	0.79	3.87	undervaluation
21Feb/2010	0.96	0.2	0.89	0.85	4.27	undervaluation
12Dec/2010	1.01	0.20	0.90	0.91	4.55	undervaluation
02Sep/2012	1.09	0.15	0.91	0.99	6.61	undervaluation
05Mar/2013	1.57	0.15	0.90	1.41	9.42	undervaluation
01Jul/2014	1.67	0.15	1.24	2.07	13.81	undervaluation
01Aug/2015	1.62	0.15	1.40	2.27	15.12	undervaluation
06Jan/2016	1.60	0.15	1.87	2.99	19.95	undervaluation
16Jul/2016	1.65	0.15	1.95	3.22	21.45	undervaluation
02Jul/2017	1.75	0.15	2.65	4.64	30.92	undervaluation
01Jan/2018	1.80	0.15	3.05	5.49	36.60	undervaluation
01Apr/2018	1.85	0.15	1.81	3.35	22.32	undervaluation
24Jun/2018	1.925	0.15	1.75	3.37	22.46	undervaluation
02Sep/2018	1.985	0.15	1.89	3.75	25.01	undervaluation
31Mar/2019	2.065	0.15	1.49	3.08	20.51	undervaluation
07Apr/2020	2.035	0.15	1.65	3.36	22.39	undervaluation
08May/2020	2.005	0.15	2.05	4.11	27.40	undervaluation
09Jun/2020	1.975	0.15	1.99	3.93	26.20	undervaluation
07Jul/2020	1.945	0.15	2.07	4.03	26.84	undervaluation
10Aug/2020	1.915	0.15	2.27	4.35	28.98	undervaluation
05Feb/2021	1.955	0.15	1.89	3.69	24.63	undervaluation
11Mar/2021	1.995	0.15	1.89	3.77	25.14	undervaluation
20Apr/2021	2.095	0.15	1.88	3.94	26.26	undervaluation
01Feb/2022	2.155	0.15	1.65	3.56	23.71	undervaluation
01Mar/2022	2.22	0.15	1.65	3.66	24.42	undervaluation
14Apr/2022	2.33	0.15	1.65	3.84	25.63	undervaluation
18Sep/2022	2.4	0.15	1.65	3.96	26.40	undervaluation
24Nov/2022	[1]2.525	0.15	1.63	4.12	27.44	undervaluation

3. The super gasoline prices in Tunisia reached 2.855 TNDs per one litter on 24 November 2022 which means that the PPP value will be about 31 times.