A NON-PARAMETRIC STUDY ON THE ADVERSE EFFECTS OF THE US-ISRAEL AND IRAN 40-DAY WAR ON THE INDONESIAN ECONOMY

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***Abstract* — In the realm of non-parametric analysis, Indonesia's mostly affected concerns are the energy shock affecting the national government's fiscal policy, monetary policy, and financial system development. The study has compared the economic conditions between the pre-war period and wartime period during the US-Israel and Iran 40-day war using Spearman rank order test, as well as Wilcoxon shared-rank to test the differences. Both techniques have tested and indicated that the war has a profound impact temporarily, but it doesn't cause structural shift to the economy; i.e. resulting in a relatively large oil subsidy, the deteriorating Rupiah, downgrading risk of the existing Emerging Equity Market by Morgan Stanley Capital International (MSCI), and several others. Expediting the existing oil refineries, higher degree of B40/B50 formation, right allocation of the Indonesian national government budget, and increase of its GDP, are encouraged.**

***Keywords*— Fiscal, GDP, IDX, IHSG, Monetary, Non-Parametric, Oil Price Shock**

I. Introduction

Effective February 28, 2026, as well as subsequent to the failure of nuclear negotiations (Kollewe, 2026) the coalition of US and Israel, has engaged in the war against Iran through an Operation Roaring Lion/Epic Fury, an error in the coordinated military campaign (Baig, 2026). The former strikes are mostly aimed at Iran's nuclear and military infrastructure, causing significant damages and death of the supreme leader Ali Khamenei, in addition to weaken the Iran-Venezuela strategic hub in the western hemisphere. Pelayo and Fontenrose (2026) commented that the hub has served as a sanctuary for Hezbolah's center for operation and money laundering (especially in Margarita-island and Paraguana peninsula). Iran retaliated and targeted Saudi Arabia's refineries and restricted shipping in the Strait of Hormuz reducing 80 vessels to less than 20 in March 1, 2026. Refer to Figure 2. A conditional ceasefire took place on April 8, 2026. This 40-day war, has to a large extent caused certain tumultuous effects on the Indonesian economy, in spite of the still robust growth rate of 4.9% per year. Refer to Figure 1.

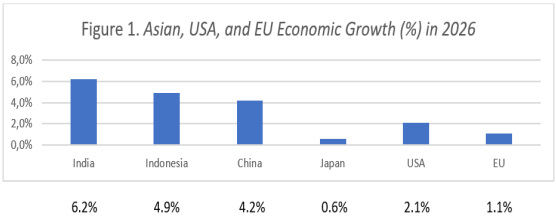


Figure 1. *Asian, USA, and EU Economic Growth (%) in 2026*

Source: International Monetary Fund (IMF)

On the basis of this US-Israel and Iran 40-day war, the study focuses on the impacts during the period February 27 to May 5, 2026 compared to the pre-war period.

It specifically seeks to test the following research questions and null hypotheses.

First, is there a monotonic association of the adverse effects between the pre-war and 40-day wartime on the Indonesian economy? It is expressed through H_0: p_s (Spearman coefficient) = 0, that there is no monotonic association.
Second, are there significant differences in Indonesia economic conditions before and during the 40-day US-Israel and Iran war? It is expressed through H_0: $Median_{difference}$ = 0, that there are no significant differences.

Pursuant to the above two given research questions, the related null hypotheses comprise of the following indicators according to the non-parametric statistics: First, using the Spearman rank-order test, the pairs tested for association are the following: $H_{1\text{-}3}$ (P_{oil} with S, CPI, and Rp/$), H_4 (Rp/$ and CapAct), H_5 (CapAct and Res), H_6 (IHSG and MCap), H_7 (BD and y), H_8 (BD and CapAct), H_9 (CapAct and FDI), and H_{10} (P_{oil} and BD). Second, the differences are between X_i (pre-war) and Y_i (wartime).

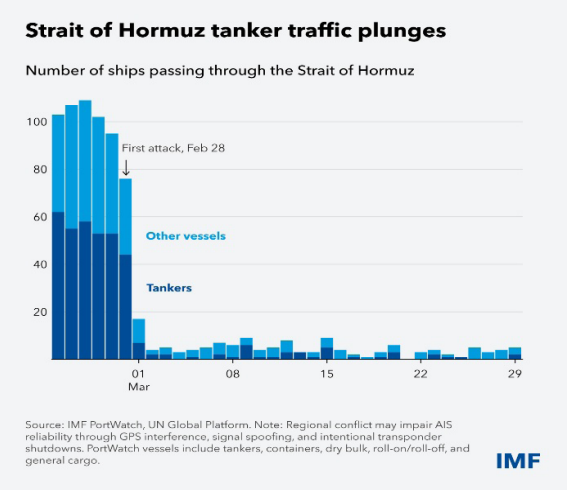
The study began with the world oil prices and domestic Indonesian local gas price. Prices of Brent and West Texas Intermediate or WTI increased at a CARC% of 86.17 as of March 16, 2026 and 32.84 as of April 30, 2026, which generally affected the domestic gasoline prices; i.e. CARC% of 34.50% in March 16, 2026, then fluctuated in the vicinity of 1 to 4%. Refer to Table 1.

Table 1. *Compounded Annual Rate of Changes (CARC) of Energy Cost*

D A T E	BRENT	W.T.I.	Average	CARC %	Local Gas	CARC %
May-05	108.2	102.3	105.25	-0.65%	12,766	4.99%
Apr-30	115.0	104.8	109.9	32.84%	12,390	-0.45%
Apr-15	96.00	93.8	94.9	-0.94%	12700	1.15%
Mar-30	111.1	102.0	106.55	2.02%	12,300	-0.58%
Mar-16	103.5	100.0	101.75	86.17%	12,760	34.50%
Feb-27	72.5	67.0	69.75	4.14%	11,800	5.53%

Source: *Indonesian Ministry of Energy and Mineral Resources (ESDM)*

Figure 2. *Graphic Visualization on the Effects of Strait Hormuz's Blockade*



Source: *IMF Report*

With the above increasing energy cost, Indonesia's domestic energy-based consumption seems to indicate vulnerabilities as domestic oil production represent some forty percent of consumption. If Indonesian GDP in nominal price in 2025 is approximately recorded at USD 1.48 trillion (GDP in ppp = USD 6.30 trillion), domestic oil consumption must have been estimated at around less than USD 600 billion or Rp 10,080 trillion, which is unbelievably a huge amount of money. Hence, heavy reliance on imported crude and refined products makes the country's economy vulnerable to supply shocks. To mitigate these vulnerabilities from heavy reliance, Indonesia must focus on the following:

- Expediting the refineries expansion; i.e. half a million barrels per day addition. As of 2025, there are eight major refineries, owned by Pertamina, with an average utilization rate of about 80% at an approximate 1.1 million barrels per day (bpd). They are the Tangguh LNG in West Papua, Kutei Basin in East Kalimantan, Tuna Offshore Block in Natuna Island, Masela Abadi Gasfield LNG in Maluku, and SKK Migas Pipelines in several locations. Warren (2026) reported that Pertamina has added another refinery in Balikpapan at an investment cost of USD 7.4 billion. Why not intensifying these?

- Expanding the B40/B50 biodiesel program (Andriyanto, 2026) to increase energy independence by adding the B40 (40% blend) to B50 (50% blend).

- Diversifying import sources away from the Middle East regions to cheaper energy cost regions (Tan, 2026).

II. Impacts on Indonesian Monetary, Fiscal, and Financial System Development

Due to the US-Israel and Iran 40-day war, energy cost has generally caused severe impacts on Indonesian monetary, fiscal, and financial system, in spite of the findings of the observation. Not to mention the severe impacts on energy price on the rest of the Indonesian economic sectors, Hasjanah, K. (2026) has reported a heavy constraint of around Rp 381.3 trillion energy subsidies on the country fiscal policy.

Effects on Monetary Policy

With the discouraging upheavals, Bank Indonesia (BI) seemed to cease the implementation of cutting rate and maintained the benchmark at 4.75 p.a. to defend the Rupiah. The effects of US-Israel and Iran 40-day war on domestic inflationary pressure seems to be a cost-push in nature (Crawfurd and Kandpal, 2026). The surge is practically caused by the rising oil-derived products, basic chemical (particularly plastic-based) products, and high transportation cost, which all are included in the CPI basket. Pratiwi (2026) practically suggests some of the monetary measures to combat the upheavals; i.e. aggressive foreign exchange intervention, reserve utilization, tightening USD purchase rules, high interest rate to attract more investment in the Indonesian banking system, and open-market policy implementation; i.e. increased utilization of the Sekuritas Rupiah Bank Indonesia (SRBI) to yield for enhancing market attractiveness and managing liquidity (Hamdhi, 2026).

Effects on Fiscal Policy

Still within the realm of financial development, impacts on the Indonesian budgetary policy are among the most imperative sector to focus. With the earlier-mentioned Rp 381.3 trillion subsidies, the Anggaran Pendapatan & Belanja Negara (APBN) or the National Budget as of the year 2026, is obviously constrained on the concern of further more important

infrastructure development. This amount, larger than that of the Rp 200 trillion in the 2025 National Budget subsidies, is due to increased fuel consumption for household and business. The Indonesian national government will either increase the total spending beyond Rp 3,842.7 trillion, including regional transfers, if any, or it will be compelled to cut other expenditures to maintain the total budget within prescribed limit. By virtue of Law No. 17/2003 on State Finance, this limit must not exceed 3% of Indonesian GDP. As of 2026, the Rp 689.8 trillion deficit is financed by issuing the Surat Berharga Negara or SBN, which consists of the government bond SUN (Surat Utang Negara) and Sharia-based government bond SBSN (Surat Berharga Syariah Negara). Refer to Table 2.

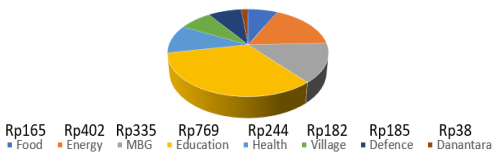
Table 2. *Indonesia's Approved National Budget*

DESCRIPTION	2026	%
Tax revenue	2693.7	85.4%
Non-tax revenue	459.2	14.6%
Total approved (A)	3152.9	100.0%
Less expenditures:		
*National government	3149.7	99.9%
*Regional transfers	693.0	22.0%
Total approved (B)	3842.7	121.9%
Surplus/(Deficit) (A)-(B)	-689.8	

Source: *Ministry of Finance of Republic of Indonesia*

The Ministry of Finance (2026) has prioritized the eight (8) expenditure agenda; i.e. the food (Rp 165 T for BULOG'S rice field development, fertilizer, access road system), energy (Rp 402 T for the Rp 381 T energy subsidies, renewable energy development, village electricity), MBG (Rp 335 T for students, breastfeed-mothers, and toddlers), education (Rp 769 T for transfers to the Indonesian regions), health (Rp 244 T for insurance, hospital revitalization, and nutrition), village development (Rp 182 T for cooperative development, and placement funding), defense (Rp 185.2 T for defense modernization, law and order) , and investment (by virtue of a government investment company Daya Anagata Nusantara or Danantara's USD 38 billion investment for the real economic sectors and million-units housing program). Refer to Figure 3.

Figure 3. *Ministry of Finance's Eight Priority Agenda in 2026 (In Trillion Rupiah)*

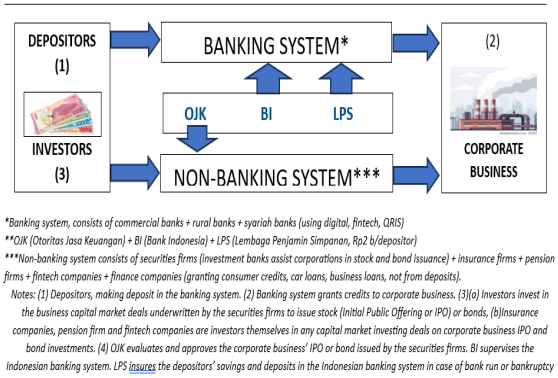


Source: *Indonesia's Ministry of Finance (APBN Kita)*

Effects on Financial System Development

As described earlier, Indonesian financial system according to Montgomery, J. (1997) mainly focuses on the banking system and securities market business, which primarily mobilize the country's savings and allocate investment funds, with estimated total assets of more than Rp 12 trillion (holding market share of around 78% of the Indonesian financial system) and approximately Rp 3 trillion (holding market share of around 22%) as of 2024, respectively (IMF, 2024). Refer to Figure 4.

Figure 4. *Indonesian Financial System Affected by the US-Israel and Iran War*



*Banking system, consists of commercial banks + rural banks + syariah banks (using digital, fintech, QRIS)
**OJK (Otoritas Jasa Keuangan) + BI (Bank Indonesia) + LPS (Lembaga Penjamin Simpanan, Rp2 b/depositor)
***Non-banking system consists of securities firms (investment banks assist corporations in stock and bond issuance) + insurance firms + pension firms + fintech companies + finance companies (granting consumer credits, car loans, business loans, not from deposits).
Notes: (1) Depositors, making deposit in the banking system. (2) Banking system grants credits to corporate business. (3)(a) Investors invest in the business capital market deals underwritten by the securities firms to issue stock (Initial Public Offering or IPO) or bonds, (b)Insurance companies, pension firm and fintech companies are investors themselves in any capital market investing deals on corporate business IPO and bond investments. (4) OJK evaluates and approves the corporate business' IPO or bond issued by the securities firms. BI supervises the Indonesian banking system. LPS insures the depositors' savings and deposits in the Indonesian banking system in case of bank run or bankruptcy

One imperative and informative point in the linkage of financial system and a country's budgeting process is whether it adopts a balanced budget, or surplus/deficit budget (Kidwell, et. al, 2012). Since 1968, the Indonesian government adopted the balanced budget system, until it was reformed under the Soeharto's administration in 2003 by virtue of Law No. 17/2003 on State Finances (Seknas Fitra, 2026). Other Asian country like India is also adopting this unified-performance-based budget system directed reform in its national budget system with its reformed financial system (Hasan, 2024). India has seen the wisdom of using it.

Depreciation of Rupiah Against the USD and Declining IHSG

The US-Israel and Iran war, beginning middle of March 2026, has aggravated the Rupiah even more, from Rp 16.960 in March 16, 2026 to Rp 17,200 in March 30, 2026, the highest CARC% rate of 0.40% in the 40-day war, followed by Rp 17,165 in April 15, 2026 to Rp 17,310 in April 30, 2026, second highest CARC% rate of 0.22%. Not to mention the affected decline of the IHSG (Indeks Harga Saham Gabungan) of the Indonesian stock market with the worse CARC% rates of 0.76%, 0.45%, and 0.44%, as of March 16, April 30, and May 5, 2026, respectively, due to the loss of confidence on the market. Refer to Table 3.

Table 3. *Indonesian Stock Market Index (IHSG%) and Rp/USD Rate During Feb. 27-May 5, 2026*

D A T E	IHSG %	C A R C %	Rp/USD	C A R C %
May-05	6962	**-0.44%**	17345	-0.05%
Apr-30	7136	**-0.45%**	17310	**-0.22%**
Apr-15	7318	1.48%	17165	0.05%
Mar-30	7045	0.05%	17200	**-0.40%**
Mar-16	7030	**-0.76%**	16960	**-0.25%**
Feb-27	8212	-0.34%	16800	-0.02%

Source: *IDX* https://www.idx.co.id/id/data-pasar/laporan-statistik/

Among others, temporary loss of confidence on the Indonesian stock market, is due to the downgrade fear of Morgan Stanley Capital International (MSCI) status from Emerging Market to Frontier Market (Gordon, 2026), and the emotional pressure of capital flight on banking shares sell-off by foreigners, driven by the global hedge funds and offshore institutional investors. According to the IDX, the sell-off of bank BRI, BCA, Mandiri, and BNI, recorded an approximate large amount of Rp 72 trillion or USD 4.4 billion. In terms of Indonesian nominal GDP as of 2024, it represents some 0.33%. It is indeed painful to hear about this 40-day war aftermath effect.

Table 4. *Group Firm's % Level of Transactions and % Free Float in IDX*

GROUP	Market Cap-Rp T	% Transactions	% Free Float
Djarum	920	15	40
Barito	622	8	23
Sinar Mas	400	3	39
Astra	233	6	49
Salim	160	4	30
Lippo	60	2	25
Emtek	56	4	27
Triputra	45	2	17
Bakrie	40	2	60
Saratoga	24	3	10
Other shares	10840	n/a	n/a
Total	13400	49	32

Source: Evaluated from the OJK and IDX's statistics as of 2025
Note: % Transactions = group's over total transactions, and % free floats = (total shares issued less locked-in shares) x market price/share

The average free float of 32%, which seems to be the reason for this downgrade, will probably materialize, because of the MSCI's definition of Emerging Market = 50-70%, compared to that of the 15-40%, not to mention the very low % transactions. Only the Bakrie group (60%), Astra group (49%), and Djarum group (40%) represent the highest free float. Refer to Table 4.

Capital Outflows from the Indonesian Listed Banking Shares

Van der Schaar Investment (2026) reports that the 40-day war has generally caused the Indonesian non-banking system's foreign capital outflows, composite IHSG index fluctuation, and uncertain halt to initial public offering or IPO halt. Desfika, F.S. (2026) partially reports that BRI recorded the largest foreign outflows at Rp 1.75 trillion, followed by BCA at Rp 1.59 trillion, BNI at Rp 1.06 trillion and Bank Mandiri at Rp 875.6 billion, or a total of around Rp 5.27 trillion, not to mention other outflow before the 40-day war (MSCI, 2026). They referred to the late January 2026 massive net selling of Rp 12.4 trillion due to the latter's decision to freeze index adjustments to transparency and free-float concerns. These phenomena are reflected on the continual decline of IHSG's CARC%, beginning on March 16, 2026 (-0.76%), April 30, 2026 (-0.45%) and May 5, 2026 (-0.44%). Refer to Table 3. All in all, the total foreign investors withdrawal is approximately recorded at Rp 23.3 trillion or USD 1.4 billion.

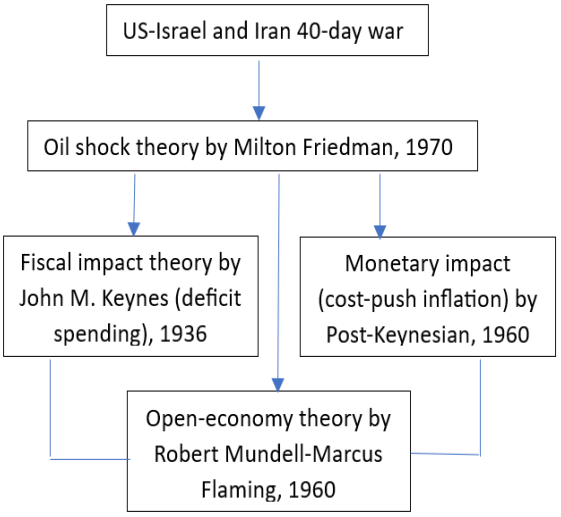
III. THEORETICAL FRAMEWORK AND RESEARCH METHODOLOGY

The research methodology is composed of the theoretical framework, research method and analysis, the sample size indicators, as well as the research gap.

Theoretical Framework

The study simply focuses on the oil shock phenomenon due to the closure of the Strait of Hormuz, among others.

Figure 5. *Theoretical Framework on Oil Shock*



Note: *The theoretical framework is based on the origination of the oil shock that fiscal and monetary policies are fundamentally affected, including that of the introduction of the Investment Saving-Liquidity preference Money supply (IS-LM) theory by Mundell-Marcus.*

Lothian (2015) mentioned Milton Friedman's argument pertaining to the oil shock basically, which leads to the inflationary pressure, a monetary phenomenon. His theory does support the fiscal impact theory introduced by John M. Keynes (Jahan et. al., 2014), where it says that there is a strong relation between this monetary phenomenon with government's deficit spending. This phenomenon did occur in the period when the 40-day war took place, when the Indonesian government had to spend a relatively large amount of money to subsidize the domestic energy.

Greenwood (2022) presented Friedman's view on economic shock, noting that they require the combined application of monetary and fiscal policies (Tanku, 2026; Boughton, 2003). Refer to Figure 5.

Research Methodology

Research Method and Analysis. The study employs two non-parametric statistical techniques, the Spearman rank-order test and Wilcoxon signed-tank test, with 15 economic indicators and 12 observational periods (6 years pre-war and 6 years in wartime). The following are the simple mathematics of the two in answering the question using the 5% significance level:

First, $p_s = 1 - (6 \sum D^2)/n\ (n^2 - 1)$, where p_s is the Spearman rho, $\sum D^2$ = sum of the squares of the difference between pre-war and wartime, n = sample size, 6 and 1 = constant. Association between pre-war and wartime is solved by rejecting the H0 if $p_s >$ the sample proportion value (observed % of the success rate), or H0: $p_s = 0$. There is no association otherwise.

Second, the coefficient is measured whether the difference is zero ($D_i = X_i - Y_i$) using the Wilcoxon shared-rank test. Then the absolute D_i is ranked, signs are restored, and the + and – sums are computed. And the test is computed: W = min (Ri+, Ri-), where W is the coefficient of difference using the 15 indicators between the pre-war (X_i) and wartime (Y_i), R_i^+ = positive signed rank, and R_i^- = negative signed rank.

Sample Size (Indicators and Observations). The data set of the study comprises N = 15 related economic indicators and N = 12 temporal observational periods (pre-war and wartime). With 15 indicators (Oil price=P_{oil}, energy subsidy=S, industrial production index=IP, consumer price index or inflation=CPI, interest rate=i, yield of SBN or surat berharga negara=y, forex reserve=Res, budget deficit=BD, SBN auction financing=SBN, Rp exchange rate=Rp/$, IDX index=IHSG, market capitalization=MCap, futures commodity price=F_{oil}, capital account transaction=CapAct, inward foreign direct investment=FDI), and 12 observational periods (6 pre-war = Nov 30, Dec 15, Dec 30, Jan 15, Jan 31, and Feb 15; and 6 wartime = Feb 27, Mar 16, Mar 30, Apr 15, Apr 30, and May 5), the study has chosen a non-parametric statistical analysis, because there is no strict parametric assumption of population distribution.

Research Gap. Research gap is herewith presented in two dimensions, i.e. the availability of the study in the literature and limitation of not using parametric statistical method. First, answers to the unexplored questions on war diverse consequences are few in the literature, which this study attempts to add. Second, the study is limited due to its lower end sample size. Hence, a non-parametric technique is used to address it, but yet it yields a satisfactory result.

IV. Analysis and Discussion

The 40-day war between the US-Israel and Iran (February 28-April 8, 2026) does create asymmetric economic disruptions globally, including that in the Indonesian economy to a certain extent. It mainly affects the energy supply-related shock as a sharp spike in the worldly crude oil prices accompanied by liquidity constraint. Using the Spearman rank-order test and Wilcoxon signed-rank test, the study sought to answer the two main research questions on association and differences between the pre-war and war-time adverse effects, which the statistical outcome is presented in Table 5.

Table 5. *Result of Spearman and Wilcoxon Outcome*

RQ	H_0 Analysis	p_s	p	Outcome
1	Monotonic (Spearman)			
	H7: BD ⇔ y	0.853	0.0307	reject
	H8: BD ⇔ CapAct	0.899	0.0149	reject
	H9: CapAct ⇔FDI	0.928	0.0077	reject
	H1-6, 10 other indicator	various		fail
2	Differences (Wilcoxon)	≈37	0.333	fail

First Research Question

The research question (*Is there a monotonic association of the adverse consequences between the pre and during the 40-day war on the Indonesian economy?*) is nonparametrically answered according to the effects of the 40-day war on the Indonesian monetary policy, fiscal policy, and financial system development.

At 5% significance level, the Spearman rank-correlation analyzes the ten hypotheses and discovers the following: First, most indicators' hypotheses (H1-

6, and H10) do not show that there are associations among them. Most of them have failed to reject the hypotheses because p_s < p-value at a 5% significance level. Second, however, H7 (BD and y), H8 (BD and CapAct), and H9 (CapAct and FDI), are all rejected.

- H7: The association between BD, which is the consequence of domestic oil price spike due to the energy shock, has a relatively strong association with Indonesia national government SBN increased yield (p_s > p, or 0.853 > 0.0307). This SBN relatively small increase of yield goes along with the commercial increase in lending rate from an average 6% to 8% p.a.

- H8: The association between the same BD as the above with CapAct also reveals an association, particularly when CapAct increases along with inward FDI (p_s > p, or 0.899 > 0.0149).

- H9: While the CapAct reveals an association with the increased FDI (p_s > p, or 0.928 > 0.0077) as Badan Koordinasi Penanaman Modal (BKPM), Indonesia' board of investment, has recorded an increased FDI of Rp 490 trillion, particularly in the metals, manufacturing, services, and IT sectors.

Table 6. *Indonesian Economic Indicators Affected by the US-Israel and Iran 40-day War*

PRE-WAR						
INDICATOR	**Nov-30**	**Dec-15**	**Dec-30**	**Jan-15**	**Jan-31**	**Feb-15**
World oil price CARC %	12.3%	-48.5%	66.4%	400.6%	-44.4%	831.4%
Energy subsidies (pure + compensate) Rp-T	23.4	11.7	11.7	12.9	12.9	25.8
Industrial production index %	53.3	51.2	51.0	52.1	52.6	53.8
CPI index %	109.1	110.1	109.7	111.1	111.0	110.6
Bank lending interest rate %	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Fixed-incomeSBN yield rate %	6.7%	6.5%	6.5%	6.6%	6.8%	7.2%
Forex reserve (USD-B)	150.1	140	156.5	153.6	154.6	151.9
National budget deficit (Rp-T)	560.3	500.1	695.1	300.5	54.6	135.7
SBN public financing (Rp-T)	22	12	22	12	22	12
Rp/USD rate in $ CARC%	1.1%	1.5%	12.5%	26.2%	-15.4%	7.9%
IHSG compo. index CARC %	50.5%	45.8%	-11.0%	256.0%	-87.2%	-27.9%
Market capitalization (Rp-T)	15221	15310	15400	16429	15046	15145
Oil futures in USD/bpd	62.8	61.0	61.2	64.4	66.5	68.8
Capital account (USD-T)	3.9	4.0	4.2	3.9	4.0	4.0
Cumulative inward FDI (Rp-T)	210	210	256	251	205	150
WARTIME						
INDICATOR	**Feb. 27**	**Mar-16**	**Mar-30**	**Apr-15**	**Apr-30**	**May-05**
World oil price CARC %	4.1%	86.2%	2.0%	-0.9%	32.8%	-0.7%
Energy subsidies (pure + compensate) Rp-T	51.5	71.2	47.5	76.5	76.5	50.8
Industrial production index %	53.8	50.1	50.0	49.2	49.1	49.0
CPI index %	110.5	110.9	111.0	111.1	111.1	110.6
Bank lending interest rate %	8.1%	8.0%	7.9%	7.3%	8.0%	8.0%
Fixed-incomeSBN yield rate %	6.4%	6.5%	6.6%	6.6%	6.8%	6.8%
Forex reserve (USD-B)	152	140	148	149	148	148
National budget deficit (Rp-T)	135.7	140.1	240.1	223.0	164.4	180.4
SBN public financing (Rp-T)	22	12	22	12	22	12
Rp/USD rate in $ CARC%	-0.02%	-0.25%	-0.40%	0.05%	-0.22%	-0.05%
IHSG compo. index CARC %	-0.34%	-0.76%	0.05%	1.48%	-0.45%	-0.44%
Market capitalization (Rp-T)	14391	14552	12512	13189	12333	12414
Oil futures in USD/bpd	68.8	98.9	100.0	98.5	105.0	104.1
Capital account (USD-T)	3.9	3.8	3.9	4.0	4.1	3.9
Cumulative inward FDI (Rp-T)	154	161	250	265	497	490

Below are the general economic impacts in the wartime.

- Energy Shock: Pressure on the Indonesian national government to provide an oil-related subsidy of Rp 381.3 trillion, besides the impact on IDX's market capitalization, or a pressure on the fiscal policy:

  - Budget deficit of Rp 689.8 trillion with Bank Indonesia's open market policy pertains to SBN issuances.

  - And, SBN issuances help alleviate the constraint CapAct.

- Monetary policy pressure: Indonesian banking system's interest rates are affected, particularly the interest rate of the BI's open market policy on SBN. To a certain extent, forex reserve is affected to defend Indonesian Rupiah from further depreciating from the Rp 17,000s level.

- Stock market upheaval (IHSG): Market capitalization (averagely declined from 15425 to 13232 as of May 5, 2026) inversely correlates with that of interest rates trend to defend Rupiah value in the country.

- Commodity oil futures upheaval: Surprisingly, oil commodity increases from USD 68.8/barrel in the beginning of the 40-day war, and ends at an increased USD 104.1/barrel.

- Capital flow pressure (CapAct): In spite of increased capital account deficit (Rp 135.7 trillion in February 27 to Rp 247.3 trillion), national government is able to attract more FDIs for the country (Rp 490 trillion as of May 5, 2026).

Refer to Table 6.

Second Research Question

The research question (*Are there significant differences in Indonesia economic conditions before and during the 40-day US-Israel and Iran war?*) is non-parametrically answered by the Wilcoxon shared-rank test.

Based on the difference of $D_i = X_i - Y_i$, and after performing the procedures of ranking the absolute D_i, signing them, and determining the W+ and W-, then the result indicates that W = min ($R_i^+ = 37$, $R_i^- = 68$) at a $p = 0.33$ and Z = -.097. It implies that Indonesia's overall economic conditions in pre-war and wartime doesn't significantly differ at the 5% significance level, although there are changed indicators like

increased energy cost, energy subsidies from an average increase of Rp 16.4 trillion in pre-war to Rp 62.3 trillion, bank commercial lending rate from 5.5% p.a. to 7.9% p.a., declining IHSG from an average of 15,425 to 13,232, oil commodity futures from USD 64.1 bpd to USD 95.9, and cumulative inward FDI under the administration of President Prabowo Subiyanto. At the same time, other economic indicators either declined or remained relatively stable. Refer to Table 7.

Table 7. *Wilcoxon Test of 40-day Pre-war and Wartime*

Description	N	W+	W-	Median	Test
Pre-war	15-1	37		52.5	
Wartime	15-1		68	52.5	
W					37
p					0.33
Z					-0.97
R					0.26

Borrowed from the XLStat regardless of any sample size, the US-Israel and Iran 40-day war has captured the positioning into four quadrants. One day before the 40-day US-Israel and Iran war on February 27, 2026, Indonesian economy experienced a liquidity shock with strong fiscal injection, when Bank Indonesia performed an open market policy on SBN, while the stock market is relatively weak (QUADRANT IV). Fortunately, on March 16, 2026, in spite of increased CPI, fiscal policy is made stronger with the provision of domestic subsidy on oil-related product (QUADRANT I). On April 15, in spite of the increased CPI, Indonesian fiscal policy is tightened when the national government cut spending (QUADRANT II). Then on April 30, 2026, in spite of weaker equity market, fiscal policy is still tightened (QUADRANT III). Refer to Figure 6.

Figure 6. *Matrix Position During the US-Israel vs Iran 40-day War*

S	II – Apr. 15 Policy Tightens: weak fiscal, strong equity, but still increased CPI	I – Mar. 16 Energy Expands: strong fiscal, equity, but increased CPI
W	III – Apr. 30 Policy Contracts: fiscal contraction, weak equity, and low CPI (easing)	IV – Feb 27 Liquidity Schock: strong fiscal injects, weak equity, easing
	W	S

Note: *S = Strong, and W = Weak position during the 40-day war*

Source: Factor analysis result from FXStat evaluation

V. Summary of Findings, Conclusion, and Recommendation

Summary of Findings

1. The 40-day war doesn't badly affect the Indonesian economic system, except for the energy shock, which influences its fiscal and monetary policies; i.e. large amount of subsidy (budget deficit: BD associates with y and CapAct, and CapAct associates with FDI), inflationary pressure, and the isolated fear of capital flight due to the Indonesian banking shares sell-off. Spearman rank-order technique has tested this economic phenomenon, supported by the Wilcoxon shared-rank test.

2. Due to the above energy shock, the following are those noted effects of the 40-day war, which are generally considered isolated consequences.

   - Indonesia's fiscal policy, causing subsidies for government and household; i.e. Rp 381.3 trillion to service domestic fuel consumption.

   - The Rupiah value deterioration; i.e. to above than Rp 17,000 in April 2026, forcing Bank Indonesia to use its forex reserves to defend Rupiah.

   - IDX's banking shares sell-off (approximately USD 320 million or Rp 5.2 trillion, covering BRI, BCA, Bank Mandiri and BNI).

   - The Morgan Stanley Capital International (MSCI) threat to downgrade Indonesia's overweight global equities to equal weight global equities, or from Emerging to Frontier status.

Conclusion

Based on the findings above, the study concludes that the US-Israel and Iran 40-day war indeed affects the Indonesian economy, but it doesn't structurally alter and change it. The impact seems to center on the oil shock, which affects the fiscal and monetary policies. With abundant resources and a GDP (ppp) of above than US$ 5 trillion and GDP (ppp) per capita of ≈US$ 19,000, Indonesia seems to be backed up by a strong economic buffer to attain its economic growth.

Recommendation

Stemming from the findings, these recommendations are empirically inspired and communicated by the relevant references, which are analyzed to critically assess the implications. Nellor (2026) argues if the

illustrative question whether the open-market policy of issuing SBN is the right move to address national government deficit. Purwanti (2026) on the other side attempts to recommend reallocation of the national budget, which the Indonesian national government must indeed consider. Still part of maintaining the 3% boundary of the Indonesian national government budget deficit of 3% from the country's GDP, Ratri (2026) recommends a rationalization of the country's GDP boost. Sumarno et. al. (2022) advises more effective subsidy system in the energy increased prices, while Adam (2016) comes up with counsels for the B.I. to categorize energy and non-energy for domestic loans to boost investments. In the field of risk management, Ibrahim and Nghiem (2025) suggest a strategy for easing control of inflation, as well as Asrudin and Wibowo (2024), who encourage the commodity futures diversification of BAPPEBTI for hedging purposes. The summary of these recommendations and their implications is presented in Table 7.

Table 7. *Summary of Recommendation and Implications*

OBSERVATION'S FINDINGS	RECOMMENDATION	IMPLICATIONS	PREVIOUS REFERENCE
F1 - Fiscal policy			
1. Budget deficit (Rp689.8 T)	Prudent open-market (SBN)	Safe haven securities act	Nellor (2026)
	Reallocate existing budget	Budget cutting program	Purwanti (2026)
2. Safe 3%-deficit/GDP	Rationalization of GDP boost	Tax-based expansion	Ratri (2026)
F2 - Energy shock	Subsidy energy price for justice (review of the Rp381.3 T subsidy)	1. Renewable diversification	Sumarno et. al. (2022)
		2. Operationalize refineries	
		3. Enhanced B40/B50 plan	
F3 - Monetary policy	Prudent interest rate on energy	Banking loan for renewables	Adam (2016)
	Easing control for inflation	1. Electricity based on uses	Ibrahim and Nghiem (2025)
		2. Structural energy subsidy	
F4 - Fluctuated futures oil price	Option for the industry	Business access for hedging	Asrudin and Wibowo (2024)

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