AL HABTOOR RESEARCH CENTRE

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**Dr. Azza Hashim**
Managing Director of Al Habtoor Research Centre

BY

**Dr. Mohamed Shadi**
Head of Energy and Logistics Unit

**Mostafa Ahmed**
Head of Political and Security Studies Unit


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CONTACT US

E-mail: info@habtoorresearch.com · Website: www.habtoorresearch.com

EXECUTIVE SUMMARY

# What the war cost — and to whom

This study estimates the economic cost of the war that began on 28 February 2026, in which the United States and Israel struck the Islamic Republic of Iran, Iran closed the Strait of Hormuz, and hostilities wound down under the Islamabad Memorandum of 17 June 2026. Using a transparent, equation-based framework, every cost is expressed in constant-2026 US dollars, decomposed into direct and indirect losses, and projected across two horizons — the short term to end-2026 and the medium term to end-2030.

The headline finding is one of profound asymmetry. Iran absorbed an existential blow equal to roughly four-fifths of its pre-war output; Israel a sharp but recoverable shock; the United States a small macroeconomic cost but a large and long-tailed fiscal one; and the world economy the largest absolute loss of all — borne overwhelmingly by bystander oil-importing nations rather than by any belligerent. Crucially, the oil-price spike that dominated headlines was a transfer, not a cost: it round-tripped to its pre-war level and nets to zero globally. The true global burden is the unproduced output it left behind.

| $305B | $135B | $0.2–1.1T | $1.4T |
|---|---|---|---|
| IRAN · TO 2030 · ~81% OF GDP | ISRAEL · TO 2030 | UNITED STATES · TO 2030 | WORLD · DEADWEIGHT · TO 2030 |

## HOW THE COST WAS ESTIMATED

The estimate rests on a transparent, equation-based framework applied identically to each economy. Its master identity is simple — total cost equals direct losses plus indirect losses, less an overlap correction that prevents double counting — and every figure is built as the sum of named, sourced components rather than asserted as a single number. Costs are measured not against zero but against a counterfactual "no-war" baseline: the path each economy would have followed had the conflict never occurred, frozen from the last pre-war institutional forecasts and cross-checked against a synthetic-control construction.

A handful of parameters govern the results, and the study states each openly rather than burying it. Long-horizon liabilities are present-valued at a near-zero real social discount rate of 0.75 percent — the Stiglitz-Bilmes convention for war costs, which refuses to let compounding erase obligations that fall due over decades. Lives lost are monetised through an income-scaled Value of a Statistical Life anchored on a US base of $12.5 million, and reported throughout also as raw counts. Future paths are weighted across three scenarios — a holding ceasefire, a protracted standoff, and a re-escalation — at probabilities of 0.40, 0.35, and 0.25. And for Iran, whose official exchange rate is heavily distorted, results are reported on both a market-rate and a purchasing-power basis.

The cost is decomposed throughout into direct and indirect losses. Direct losses — five components — are the physically attributable destruction and expenditure of war: incremental military operations, destroyed physical capital, mortality, injury, and emergency outlays. Indirect losses — ten components — are the economic consequences that propagate through markets, dominated by the output gap, the present value of the GDP a country fails to produce relative to its counterfactual. A strict rule, finally, separates the real-resource and deadweight losses that genuinely destroy wealth from the transfers that merely redistribute it; transfers are counted in each national account but stripped out of the world total, which is why the national figures deliberately do not sum to it.

## THE RESULTS, ECONOMY BY ECONOMY

Iran bore by far the heaviest cost — roughly $187 billion to the end of 2026, rising to $305 billion by 2030 on a market basis, or about $720 billion at purchasing-power parity, equal to some four-fifths of pre-war GDP. The direct destruction of energy, industrial, and nuclear capital accounts for nearly half; the remainder is an output gap that, uniquely among the combatants, does not close by 2030, because a sanctioned economy without access to capital markets cannot finance its own recovery.

Israel's cost — about $59 billion to 2026 and $135 billion by 2030, roughly a quarter of a single year's output — was sharp but survivable. Layered air defence capped the physical destruction; the burden fell instead on the economics of interception, the opportunity cost of mobilising some 100,000 reservists, and a fiscal hangover of widened deficits and a credit downgrade. Crucially, Israel's output gap is transient: it could borrow, recapitalise, and demobilise, and so recovers toward trend.

The United States presents the study's sharpest paradox. Its battlefield losses were slight and its macroeconomic damage smaller still — the oil shock cost barely 0.26 points of GDP, because the country is now a net energy exporter — leaving a contained near-term cost of about $123 billion. But its bill is back-loaded: once the multi-decade liabilities of veteran care, war-debt interest, and a ratcheted defence budget are present-valued, the 2030 figure is either about $200 billion on a conservative reading or, on the full Stiglitz-Bilmes accounting, $0.8 to $1.1 trillion. The same war, reckoned two defensible ways, yields an eightfold range.

The largest cost of all fell on no belligerent. By closing the Strait of Hormuz, the war inflicted a deadweight loss on the world economy of roughly $0.82 trillion to 2026 and $1.4 trillion by 2030 — larger than the three combatants combined, and rising toward $3.5 trillion should the war resume. It is dominated by unproduced global output, not by the oil-price spike, which nets to zero; and it falls with brutal asymmetry on bystanders, the rest of the world absorbing roughly six times the GDP hit borne by the United States.

All figures are probability-weighted central (P50) estimates, present-valued to 28 February 2026. The four national accounts do not sum to the world figure by design: the world account excludes the transfers that inflate the national ledgers and includes the losses of bystander economies that have no chapter of their own. Full methodology, every parameter value, and source-by-source confidence ratings follow in Part I and the Appendix; all sources are listed in the Bibliography.

# Contents

PART ONE

# Methodology

PART I · METHODOLOGY

# A framework for costing a war

Estimating the economic cost of a war is not a matter of adding up headlines. A credible figure must specify whose cost is being measured, distinguish the destruction of real resources from the mere reshuffling of wealth, and compare the wartime economy against the one that would have existed had the war never occurred. This study builds such a figure from first principles, so that every dollar in the final ledger is traceable to an equation, a parameter, and a cited source.

The framework synthesises four established traditions in conflict economics: the comprehensive, multi-channel accounting of Brown University's Costs of War project;(1) the budgetary-plus-macroeconomic layering of Stiglitz and Bilmes;(2) the data-driven counterfactual of Abadie and Gardeazabal's synthetic-control method;(3) and the public-economics conventions of statistical-life valuation and social discounting.(4)

## 1.1 Scope and the accounting identity

The study measures the social and economic resource cost of the conflict to four entities: Iran, Israel, the United States, and the world economy. It is agnostic to who prevailed. All magnitudes resolve to constant-2026 US dollars, present-valued to the war's onset, $t_0$ = 28 February 2026.

For each entity $i$ and horizon $H$, total cost is the sum of direct and indirect losses, less an overlap correction that prevents double counting:

$$C_i^H = D_i^H + I_i^H - \Phi_i^H \tag{1}$$

where $D$ collects direct losses — the physically attributable destruction and expenditure of war — and $I$ collects indirect losses, the economic consequences that propagate through markets. The term $\Phi \geq 0$ removes the overlap between the one-time stock losses booked in $D$ and the flow losses captured in $I$ (1.5). Two horizons are reported: the short term $H_1$ to 31 December 2026, and the medium term $H_2$ to 31 December 2030.

The present value of any stream of annual losses $x_t$ is

$$\mathrm{PV}_{t_0}[x] = \Sigma_t x_t / (1+r)^{t - t_0} \tag{2}$$

at a real social discount rate $r$. Following Stiglitz and Bilmes, who argue that standard market-return rates improperly undervalue the intergenerational liabilities of war, this study adopts a low rate — central 0.75 percent, bracketed by a 0–1.5 percent sensitivity band.(5) Nominal local-currency magnitudes are first deflated to real 2026 local currency, then converted to dollars, then discounted.

## 1.2 The cost taxonomy

Direct and indirect losses are each decomposed into named components, so that the headline figure is the sum of auditable parts rather than a single guess. The direct block comprises five components; the indirect block, ten.

(1) Neta C. Crawford and the Costs of War Project, "Findings" (Providence, RI: Watson Institute, Brown University), https://costsofwar.watson.brown.edu/findings.
(2) Linda J. Bilmes and Joseph E. Stiglitz, "The Economic Costs of the Iraq War" (NBER Working Paper 12054, 2006); and Bilmes, "Estimating the Costs of War: Methodological Issues, with Applications to Iraq and Afghanistan."
(3) Alberto Abadie and Javier Gardeazabal, "The Economic Costs of Conflict: A Case Study of the Basque Country," American Economic Review 93, no. 1 (2003): 113–132.
(4) W. Kip Viscusi and Clayton J. Masterman, "Income Elasticities and Global Values of a Statistical Life," Journal of Benefit-Cost Analysis 8, no. 2 (2017): 226–250.
(5) Bilmes, "Estimating the Costs of War"; the near-zero real social discount rate reflects a nominal 3.0–4.5 percent bracket adjusted for ~3 percent inflation.

**FIG I.1** The cost taxonomy — fifteen components under one identity

$$C = D + I - \Phi$$

**DIRECT (D) — destruction & expenditure**

- $D^1$ Incremental military operations
- $D^2$ Physical capital destroyed
- $D^3$ Mortality (VSL)
- $D^4$ Morbidity (injuries, disability)
- $D^5$ Emergency fiscal outlays

Physically attributable · one-time stock losses

Booked in the period incurred (mostly 2026)

**INDIRECT (I) — market propagation**

- $I^1$ Output gap (headline)
- $I^2$ Investment & FDI loss
- $I^3$ Trade disruption
- $I^4$ Energy-market disruption
- $I^5$ Financial (FX, sovereign risk)
- $I^6$ Sectoral (tourism, aviation)
- $I^7$ Displacement & brain drain
- $I^8$ Legacy health liabilities
- $I^9$ Environmental externalities
- $I^{10}$ Global contagion

Second-order · flow losses over the horizon

$I^1$ internalises much of $I^2$–$I^6$ & $I^{10}$; only the extra-GDP residual of each is added on top

The headline output gap ($I^1$) already captures most investment, trade, financial, and confidence effects; components $I^2$–$I^6$ and $I^{10}$ are therefore added only for the portion lying outside measured GDP, preventing double counting. Source: AHRC framework.

The headline indirect measure is the output gap ($I^1$) — the present value of the difference between counterfactual and realised GDP. Because this single term already internalises many channels, the remaining indirect components are estimated as a bottom-up decomposition and cross-check, with only their extra-GDP residual added to the total.

## 1.3 Transfers versus deadweight

The single most common error in war-cost accounting is to treat a redistribution of wealth as a net cost. When the oil price spikes, importers lose and exporters gain; globally, the two net to approximately zero. Only the real destruction of capital, the loss of life, and the deadweight efficiency losses — lost output, trade frictions, idled capital — represent a genuine reduction in world wealth.

The study therefore enforces a strict rule. Entity-level accounts (Iran, Israel, US) include transfers as costs or benefits to each party — US military aid to Israel is a US cost and an Israeli offset; an oil-price rise is an importer's cost and an exporter's gain. The world account includes only real-resource destruction and deadweight losses, excluding pure transfers. Formally, for any flow classified as a transfer between accounted entities, the sum across entities is zero and the flow contributes nothing to the world total. It is for this reason that the four entity figures deliberately do not sum to the world figure.

## 1.4 The counterfactual

Every cost is measured against a "but-for" baseline: the path each economy would have followed absent the war. Two independent identifications are used and reconciled. The first freezes the last pre-war institutional projections — the IMF's World Economic Outlook and national budget forecasts published before $t_0$.(6) The second constructs, for each treated economy, a synthetic counterfactual from a donor pool of non-conflict economies matched on pre-war structure. The central output gap is the average of the two; their spread feeds the uncertainty band.

Future paths (2027–2030) are unobservable and are therefore propagated under three scenarios — a holding ceasefire, a protracted standoff, and a re-escalation — weighted 0.40, 0.35, and 0.25 respectively. The reported figure for each cell is the probability-weighted expectation,

$$\mathbb{E}[C_i^H] = \Sigma_S p_S \cdot C_i^{H,S} \qquad (3)$$

with each scenario also reported in full so the reader can see the range, not merely its mean.

(6) International Monetary Fund, World Economic Outlook (Washington, DC: IMF, January and April 2026).

## 1.5 Valuation conventions and uncertainty

Human life is monetised through the income-scaled Value of a Statistical Life. This is an analytical convention for comparing resource allocations, not a moral statement; lives lost are also reported as raw counts throughout. The US base value of $12.5 million is scaled to each economy by the ratio of per-capita incomes raised to an income elasticity of unity, the OECD standard for cross-country transfer:[7]

$$VSL_i = VSL_{US} \cdot (y_i / y_{US})^{\eta}, \quad \eta = 1.0 \tag{4}$$

Physical capital destroyed is valued at depreciated replacement cost; reconstruction need is treated as its forward-looking expression and netted via $\Phi$ so destruction is counted once. Every parameter is assigned a distribution from its cited range, and a Monte-Carlo propagation yields the central (P50) estimate and the P10–P90 band reported in each cell. A final sensitivity analysis identifies the parameters — chiefly the discount rate and the choice of market versus purchasing-power-parity basis for Iran — that move the headline most.

**METHODOLOGY IN ONE LINE**

Cost equals direct destruction plus indirect propagation, minus overlap; measured against a but-for counterfactual; with transfers included at the national level but stripped out at the world level; every figure present-valued, distribution-bounded, and sourced.

(7) OECD, Mortality Risk Valuation in Policy Assessment (Paris: OECD Publishing); cross-country elasticity of 1.0 per Viscusi and Masterman, "Income Elasticities."

PART TWO

# The Conflict

PART II · THE CONFLICT

# A short, violent war

The war was brief by the standards of modern conflict — roughly sixteen weeks from the opening salvo to the fragile stand-down — yet its intensity and reach were extraordinary. It opened with one of the largest precision-strike campaigns since the 2003 invasion of Iraq, drew in Lebanon and six Gulf states, closed the world's most important energy chokepoint, and exhausted strategic munitions stockpiles that had taken years to build. This section establishes the factual spine on which every later estimate rests.

## 2.1 Origins and onset

By February 2026 the indirect diplomatic track mediated through Pakistan and Oman had collapsed, and the Iranian regime was contending with mass protests, hyperinflation, and acute internal fragility.(8) Perceiving a closing window, the United States and Israel abandoned the negotiating table and pivoted to overwhelming force. Within the first twelve hours of 28 February, coalition forces executed nearly 900 precision strikes against Iranian missile, air-defence, command, and leadership targets; the opening salvo killed Supreme Leader Ali Khamenei.(9) The United States designated the campaign Operation Epic Fury; Israel, Operation Roaring Lion.

**FIG II.1** Timeline of the 2026 war — onset to stand-down


Kinetic phase ≈ 28 February – 17 June 2026 (~110 days), punctuated by a two-week ceasefire on 8 April and re-escalation. Source: CRS R48887; ISW; Al Jazeera trackers.

## 2.2 The campaign

The operational design prioritised decapitation and the systematic dismantling of Iran's strategic infrastructure. By the time of the stand-down, U.S. Central Command reported that coalition forces had fired 13,629 strike munitions against more than 13,000 discrete targets.(10) Strikes degraded an estimated 85 percent of Iran's integrated air-defence network, its ballistic-missile production base, its naval assets, and nuclear facilities at Natanz, Isfahan, and Arak. In asymmetric retaliation, Iran launched some 1,770 ballistic missiles and 3,955 one-way attack drones at Israel, U.S. regional bases, and Gulf energy infrastructure, and — its paramount lever — moved to close the Strait of Hormuz.(11) A U.S. naval blockade of Iranian ports followed on 13 April. The active phase ended with the Islamabad Memorandum of 17 June, a fragile framework that reopened the strait and lifted the blockade in exchange for sanctions relief and a reconstruction pledge.

## 2.3 Casualties and displacement

Human losses were profoundly asymmetric. Iran and Lebanon bore the overwhelming majority of deaths, while the standoff, precision nature of the U.S. campaign kept American fatalities low. The figures below are triangulated from official, independent-monitor, and intelligence sources; where they diverge, the range is shown.

(8) Congressional Research Service, U.S. Conflict with Iran, CRS Report R48887 (Washington, DC: CRS, March 26, 2026).
(9) Institute for the Study of War, "Iran Update Special Report: U.S. and Israeli Strikes, February 28, 2026"; see also Britannica, "2026 Iran War."
(10) Admiral Brad Cooper, U.S. Central Command, cited in Center for Strategic and International Studies, "The War May Be Ending. What Did Epic Fury Cost?" (Washington, DC: CSIS, June 2026).
(11) Casualty and ordnance tallies compiled from CRS R48887 and CSIS; see Part VI for the Hormuz energy-market analysis.

TABLE II.1 — CASUALTIES AND DISPLACEMENT BY PARTY

| Party | Deaths | Injuries | Displaced | Principal source |
|---|---|---|---|---|
| Iran | 3,468–6,000+ | 15,000–26,500 | 3.2M | HRANA; Health Ministry; IDF intel |
| Lebanon | ~4,000+ | ~12,100 | >1M | IOM; UNHCR |
| Israel | 69 | 9,161 | ~3,500 | aggregated trackers |
| United States | 13 | 413 | — | DCAS (DoD) |
| **Regional total (incl. Gulf states)** | **~7,500–10,000** | **~47,000+** | **~5M+** | |

*Iran's death toll is the study's central human-data uncertainty: the official 3,468 figure documents civilian casualties while obscuring military losses; HRANA verified 3,636 as of 7 April; U.S./Israeli intelligence estimated 6,000+ military killed. Sources: HRANA statistical overview; Defense Casualty Analysis System; IOM/UNHCR.* (12)

## 2.4 The munitions ledger

The campaign's most consequential military lesson was economic, not tactical: the exhaustion of the defence industrial base. In the first ninety-six hours alone the coalition fired roughly 5,197 high-end munitions across thirty-five weapon types, at a munitions-only replacement cost of $10–16 billion.(13) Interceptor stockpiles built over years were drawn down in weeks. The Terminal High Altitude Area Defense system — of which the United States held only a constrained global inventory — saw up to 80 percent of its stock expended, with replacement lead-times measured in years.(14)

TABLE II.2 — SELECTED U.S. MUNITIONS EXPENDED AND STOCKPILE STRAIN

| Munition | Fired | Unit cost | Stock depleted | Replacement |
|---|---|---|---|---|
| THAAD interceptor | 190–290 | $15.5M | ~80% | 53 mo |
| Patriot PAC-3 MSE | 1,060–1,430 | $3.9M | high | 42 mo |
| SM-3 Block IIA | 130–250 | $28.7M | high | 64 mo |
| Tomahawk (TLAM) | 1,000+ | $2.6M | ~33% | 47 mo |

*"Command of the Reload": modern high-end conflicts are bounded by manufacturing capacity, not stockpiles. Source: CSIS, "Last Rounds?"; Payne Institute. Unit costs are FY2026 budget-justification figures.*

**PART II — IN ONE LINE**

A 110-day campaign of more than 13,000 strikes that decapitated Iran's leadership, closed the Strait of Hormuz, displaced some five million people across the region, and burned through years of munitions production — the physical facts from which the economic ledger is built.

(12) Human Rights Activists in Iran (HRANA), "Statistical Overview" (2026); U.S. Department of Defense, Defense Casualty Analysis System, Operation Epic Fury; International Organization for Migration and UNHCR situation updates, March–June 2026.
(13) Payne Institute, via "Over 5,000 Munitions Shot in the First 96 Hours of the Iran War," Foreign Policy Research Institute (March 2026).
(14) Center for Strategic and International Studies, "Last Rounds? Status of Key Munitions at the Iran War Ceasefire" (June 2026).

PART THREE

# Iran

PART III · IRAN

# The epicentre

The 2026 war did not merely damage a functioning economy; it shattered a system already in advanced decline. Of the four economies in this study, Iran absorbed by far the heaviest blow — a cost that, by the end of the decade, approaches four-fifths of its entire pre-war output. It was, at once, the theatre on which the kinetic campaign was fought, the target of a near-total naval blockade, and the only belligerent without the fiscal or financial means to cushion the shock or finance a recovery. Where Israel and the United States absorb sharp but transient blows, Iran's wound does not close within the horizon of this study.

This chapter builds the figure from the ground up, and the construction matters more than the headline. The estimate is assembled in six steps: the no-war baseline against which all losses are measured; the direct destruction of physical capital; the loss of human life and health; the indirect propagation through a collapsing currency and a severed oil trade; the slower hemorrhage of displacement, talent flight, and environmental damage; and finally the consolidation into a total, with its scenario range and the consequential choice between market-rate and purchasing-power valuation. The central result — roughly $187 billion to the end of 2026 and $305 billion by 2030 on a market basis, or about $720 billion at purchasing-power parity — emerges only at the end, and only as the sum of auditable parts.

## 3.1 The counterfactual baseline

A cost is meaningless without a baseline. The war's economic damage is the difference between the path Iran actually followed and the path it would have followed had the conflict never occurred — and that no-war path was already bleak. For more than a decade Iran's economy had been grinding downward under the weight of sanctions, endemic corruption, and chronic fiscal mismanagement. Per-capita income had fallen from roughly $8,000 in 2012 to about $5,000 by 2024; the middle class had contracted from 58.4 percent of the population in 2011 to under 48.8 percent; and real GDP growth had averaged a stagnant 1 percent annually for two decades, starving the country of the capital formation needed to modernise its civilian infrastructure.(15) Even before a single bomb fell, the IMF had modelled 2025 inflation at over 42 percent — an economy already operating in a structurally inflationary, deeply distressed equilibrium.

Two features of that pre-war state shape the entire estimate. The first is that Iran's financing lockout was already near-total. The reimposition of United Nations "snapback" sanctions in late 2025, reinforced by renewed European restrictive measures and a standing Financial Action Task Force blacklisting, had severed Iran from international capital markets — so when the war struck, the state had no capacity to borrow its way through the shock, the very option every other belligerent retained. The second is that the counterfactual itself is bleak: this study measures the war's cost as the marginal worsening of an economy already in slow-motion crisis, not as a fall from health. That distinction makes the 7.1-point output-gap shock more severe, not less, because it lands on an economy stripped of the buffers that might otherwise have absorbed it.

Constructing the dollar baseline requires a decision that shapes every figure in this chapter: which exchange rate to use. The IMF calculates Iran's nominal GDP on an official, blended rate rather than the free-market parallel rate, yielding a pre-war 2025 figure near $376 billion.(16) The free-market rate would shrink that dollar figure to a fraction of its domestic purchasing power; purchasing-power parity would roughly quadruple it. This study adopts the official-rate figure as its headline — it best captures the state-subsidised value of non-tradable goods and services that constitute most of Iranian output — while carrying the PPP figure as a parallel cross-check, a distinction taken up directly in Section 3.6. On this basis the no-war baseline assumes a sluggish continuation of roughly 1 percent annual growth through 2030, weighed down by sanctions but buoyed by illicit hydrocarbon exports to Asian markets.

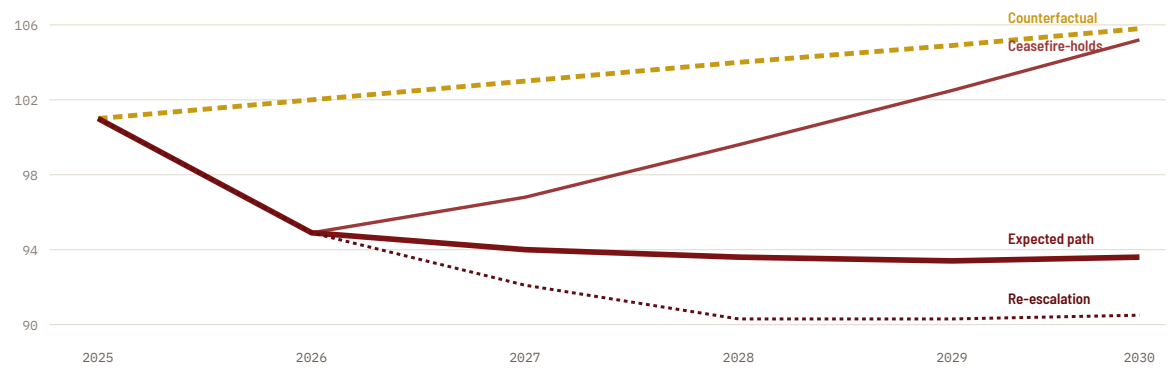
This baseline is not merely an extrapolation of the IMF's forecast. As set out in Part I, the study constructs a second, independent counterfactual using the synthetic-control method — a weighted composite of comparable non-conflict economies that tracked Iran's pre-war trajectory — and averages the two. The synthetic baseline and the IMF forecast agree closely for 2026, which is reassuring; their modest divergence in the out-years is

(15) Foundation for Defense of Democracies, "Iran's Economic Catastrophe" (Washington, DC: FDD, June 26, 2026), https://www.fdd.org/analysis/2026/06/26/irans-economic-catastrophe/.
(16) International Monetary Fund, World Economic Outlook, April 2026 (Washington, DC: IMF, 2026); pre-war projections per the January 2026 vintage. Nominal GDP on the IMF official-rate basis.

carried directly into the uncertainty band reported in Section 3.6. Where the two methods disagree, the study errs toward the more conservative figure, so that the headline cost is more likely to be understated than inflated.

Against that baseline, the rupture is stark. The IMF's April 2026 World Economic Outlook — the first post-war vintage — projected a real contraction of 6.1 percent for 2026, a swing of 7.1 percentage points from the pre-war trend and among the largest single-country downgrades in the institution's recent history.[17] For a state locked out of international debt markets, unable to borrow to smooth the blow, that 7.1-point gap translates directly into lost output, lost employment, and a deepening of the very distress that preceded the war.

**FIG III.1** **Iran real GDP — counterfactual versus the three war scenarios**




Index, 2025 = 100. The probability-weighted "expected path" stays well below the counterfactual through 2030; only the ceasefire-holds branch recovers toward trend. Source: AHRC computation on IMF WEO April 2026.

Figure III.1 traces this divergence to 2030. The counterfactual, in gold, inches upward at roughly 1 percent a year. All three war scenarios collapse together in 2026 to the IMF's –6.1 percent, then fan apart: only the ceasefire-holds branch recovers toward trend by the end of the decade, while the protracted and re-escalation branches leave the economy permanently lower. The bold maroon line is the probability-weighted expected path — the three scenarios weighted 0.40, 0.35, and 0.25 respectively — and its defining feature is that it never returns to trend. Because two of the three branches keep Iran depressed, the expected output gap actually widens before it narrows, a pattern unique among the four economies in this study and the central reason Iran's medium-term cost is so large.

**TABLE III.1 — IRAN: COUNTERFACTUAL PATH AND THE EXPECTED OUTPUT GAP**

| Metric | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|
| Counterfactual growth (%) | — | +1.0 | +1.0 | +1.0 | +1.0 | +1.0 |
| Counterfactual GDP ($B) | 376.0 | 379.8 | 383.6 | 387.4 | 391.3 | 395.2 |
| Expected output gap (pp) | — | 7.1 | 8.0 | 7.8 | 7.2 | 6.2 |
| Annual output loss ($B) | — | 26.7 | 30.2 | 29.3 | 26.9 | 23.3 |

*Index basis 2025 = 100; each percentage point of gap ≈ $3.76B at the market rate. Probability-weighted across the three scenarios. Source: AHRC computation on IMF WEO April 2026.*

The numbers in the table are the spine of everything that follows. The expected gap widens from 7.1 percentage points in 2026 to roughly 8.0 in 2027 — as the protracted and re-escalation branches drag down the average — before easing only to 6.2 points by 2030, still wide open at the end of the horizon. Converted to dollars and present-valued, these annual losses accumulate into the single largest line in Iran's entire ledger; Section 3.4 returns to

(17) IMF, World Economic Outlook, April 2026; the –6.1 percent 2026 projection is corroborated in FDD, "Iran's Economic Catastrophe."

quantify it. The remainder of this chapter explains what produced the contraction and what else was lost alongside it.

## 3.2 The destruction of physical capital

The destruction of physical capital is the most visible of Iran's losses and, because capital is slow and costly to rebuild under sanctions, among the most enduring. The coalition's targeting reflected a deliberate calculus. Planners consciously spared the Kharg Island export terminal — through which more than 90 percent of Iranian crude ships — to avoid triggering an uncontrolled, permanent global energy crisis, even as they systematically dismantled the downstream, high-margin sectors on which the state's finances rest.

The petrochemical sector bore the heaviest blow. On 18 March, coalition forces struck the South Pars complex and related facilities at Mahshahr and Assaluyeh, disabling refineries that together accounted for more than 48 percent of pre-war petrochemical output and roughly 100 million cubic metres per day of gas processing — close to a eighth of national gas production.(18) South Pars alone represented some $70 billion in cumulative historical investment, and the Foundation for Defense of Democracies judges that rebuilding it under an international technology embargo will take more than a decade.

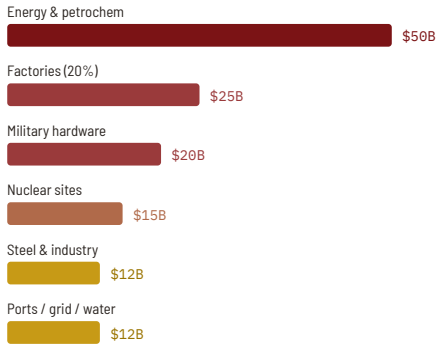
Iran's industrial backbone fared little better. The Khuzestan and Mobarakeh steelworks — the country's primary producers — sustained crippling damage to their electrical and furnace infrastructure, halting output and forcing the state to import basic materials for its own reconstruction. In all, more than 20,000 factories and industrial units, roughly a fifth of the national production base, were damaged or destroyed.(19) The major port of Bandar Abbas, which handles over half of Iran's trade, was set ablaze, choking the non-oil imports on which domestic supply chains depend.

A stated objective of the campaign was the neutralisation of Iran's nuclear programme. Specialised munitions inflicted severe damage on the Natanz enrichment facility, the Khondab heavy-water complex near Arak, the Isfahan conversion and fuel-fabrication plants, and the Shahid Rezayee yellowcake site in Yazd.(20) No public dollar figure exists for this destruction — the IAEA and CSIS document physical damage only — so the study models it at roughly $15 billion using facility construction-cost proxies, a figure that should be read as indicative rather than measured.

The nuclear strikes carry an economic dimension beyond that modelled damage. Iran had invested, by most estimates, well over $100 billion in its nuclear and missile programmes across two decades — a vast diversion of national savings that produced, in the space of a single campaign, craters and contaminated tunnels. Whether one regards that programme as an asset or a liability, its destruction represents the writing-off of an enormous accumulated investment, and its reconstitution under a tightened non-proliferation regime is, for the foreseeable horizon, foreclosed. The study counts only the replacement cost of the struck facilities, not this larger sunk cost, in keeping with its conservative treatment throughout — another respect in which the headline figure is a floor rather than a ceiling.

Within densely populated cities, the bombardment caused severe collateral damage to civilian assets. United Nations assessments recorded nearly 149,000 housing and commercial units damaged, displacing some 400,000 people in the immediate aftermath, while over 1,200 educational facilities were struck and at least 20 schools destroyed, leaving an estimated 17 million pupils without in-person instruction.(21) Figure III.2 decomposes the study's central physical-capital estimate of roughly $130 billion into its principal components.

**FIG III.2 Physical-capital damage by sector**




Central replacement-cost decomposition, ≈ $130B (housing folded into civilian total). Source: AHRC computation on FDD, UN OCHA, IAEA, IISS inputs.

Energy and petrochemicals dominate the decomposition at roughly $50 billion, followed by the destroyed factories at $25 billion, military hardware at $20 billion, the

(18) FDD, "Iran's Economic Catastrophe"; South Pars strike detail corroborated by Bloomberg and Iranian state outlet SHANA, March 2026.
(19) FDD, "Iran's Economic Catastrophe"; industrial-base figures cross-checked against UN OCHA damage reporting via the Norwegian Refugee Council.
(20) International Atomic Energy Agency and Center for Strategic and International Studies damage assessments, March–April 2026; the IAEA confirmed damage but could not verify the status of enriched-uranium stocks.
(21) United Nations Office for the Coordination of Humanitarian Affairs, via the Norwegian Refugee Council, "Iran: War Has Devastated Life for Millions" (2026).

nuclear sites at $15 billion, and the steel and ports-grid-water clusters at about $12 billion each; housing is folded into the civilian total. The estimate sits deliberately between two poles. Estimates of Iran's total physical damage vary by an order of magnitude, and the spread is itself informative. The Foundation for Defense of Democracies models a bare-replacement floor of $91 billion, covering only destroyed hardware and physical civilian infrastructure. The Iranian regime's own spokesperson placed total direct and indirect damage at $270 billion, and the reconstruction need codified in the Islamabad Memorandum approaches $300 billion.(22)

These figures are not contradictory; they measure different things. The $91 billion floor is bare replacement; the $270 billion and $300 billion figures add the financing premiums, embargo-inflated procurement, and betterment that reconstruction under sanctions inevitably entails. This study adopts $130 billion as its central physical-capital estimate — above the bare floor, below the financing-inclusive pledge — and, crucially, treats the reconstruction programme as the forward-looking expression of that same destruction rather than a separate cost, netting the overlap through the $\Phi$ term so that nothing is counted twice.

The reconstruction figure rests on an assumption worth making explicit: that the capital can, in fact, be rebuilt. Under the technology embargo that the snapback restored, much of the specialised equipment destroyed at South Pars, Mobarakeh, and the nuclear sites cannot be lawfully procured, and neither of Iran's principal partners is positioned to substitute — Russia is fully absorbed by its own war, and China is unwilling to jeopardise its access to the US financial system. The Islamabad Memorandum's $300 billion pledge is, on paper, to be funded by Gulf states and private capital, but as of mid-2026 no contributor had confirmed a figure. A reconstruction that can be neither financed nor supplied is a reconstruction deferred — which is precisely why Iran's central bank privately warned the presidency that rebuilding would take more than a decade, and why the output gap traced in Figure III.1 stays stubbornly open through 2030.

The deeper damage is to Iran's economic model itself. For half a century the Islamic Republic has run a rentier economy, converting hydrocarbon exports into the hard currency that pays for imports and underwrites the state. The 2026 campaign attacked that model at its joints — not the upstream wellheads, which were largely spared, but the downstream refining and petrochemical capacity that turns crude into exportable value, and the ports and shipping through which that value reaches market. Rebuilding a refinery is a matter of capital and time; rebuilding the export relationships, the insurance arrangements, and the buyer confidence that a sanctioned, war-damaged exporter has lost is a matter of years, and may never fully succeed. The physical-capital figure in Table III.2 therefore understates the strategic loss: it prices the bricks, not the business they once housed.

## 3.3 Human capital and the value of life

Beyond bricks and steel, the war destroyed human capital — a permanent downward shift in productive capacity that no reconstruction fund can restore. Quantifying it first requires confronting a genuine data problem. The Iranian Health Ministry reported 3,468 deaths and over 26,500 injuries, but this figure documents civilian casualties admitted to state hospitals while deliberately obscuring military and Revolutionary Guard losses. The independent monitor HRANA verified 3,636 deaths as of 7 April — 1,701 civilians, 1,221 military, and 714 unclassified — and judged that military deaths were almost certainly higher.(23) US and Israeli intelligence, by contrast, estimated more than 6,000 military personnel killed. The study adopts a central estimate of 5,000 deaths within a range of 3,500 to 6,600, alongside 20,000 injuries.

To enter these losses into a dollar ledger, the study applies the income-scaled Value of a Statistical Life. Because Iran has no domestic VSL literature, the value is transferred from the United States base of $12.5 million, scaled by the ratio of per-capita incomes raised to an income elasticity of one — the OECD standard for cross-country transfer.(24) On Iran's market-rate per-capita income of about $4,180 this yields a VSL near $0.5 million, a figure corroborated by a peer-reviewed meta-estimate for lower-middle-income countries of roughly $420,000. On a purchasing-power basis the value rises to about $2.4 million — a fourfold divergence taken up directly in Section 3.6. At the market VSL, the loss of life contributes about $2.5 billion to the direct ledger.

Mortality is only the most visible human cost. The more than 20,000 injured impose a second, longer burden — the disability-adjusted life-years lost to permanent injury, a lifetime of medical care, and the withdrawal of working-age adults from the labour force. Because the severity distribution of these injuries is not yet docum-

(22) FDD, "Iran's Economic Catastrophe," citing government spokesperson Fatemeh Mohajerani for the $270 billion figure; reconstruction pledge per the Islamabad Memorandum of Understanding, June 17, 2026.
(23) Human Rights Activists in Iran, "Statistical Overview" (2026); Iranian Health Ministry figures via the Norwegian Refugee Council.
(24) W. Kip Viscusi and Clayton J. Masterman, "Income Elasticities and Global Values of a Statistical Life," Journal of Benefit-Cost Analysis 8, no. 2 (2017); OECD, Mortality Risk Valuation in Policy Assessment (Paris: OECD).

ented, the study carries their long-tail cost in the indirect ledger rather than risk a spurious precision here. A parallel human-capital calculation — valuing each death by the present value of foregone lifetime earnings rather than by willingness-to-pay — yields a figure well below the VSL estimate, as it does in every low-income setting. The study reports the VSL figure as its central estimate while noting that this human-capital floor is lower, and that both, in any case, are dwarfed by the output and capital losses that dominate Iran's ledger.

The wide range around the casualty figures matters less for the total than one might expect, precisely because human-capital losses are small relative to the destruction of physical capital and output in a lower-middle-income economy. Even at the upper bound of 6,600 deaths, and even at the higher PPP-based valuation of life, mortality and morbidity together account for well under a tenth of Iran's total cost. This is not a statement about the worth of Iranian lives, which the study insists on reporting as counts; it is an arithmetic feature of war-cost accounting in poorer economies, where the machinery, the buildings, and the foregone production dominate the ledger. The opposite will prove true for the United States in Part V, where the casualties are few but the fiscal tail is vast.

Two caveats attach to this calculation. First, monetising life is an analytical convention for comparing resource allocations under risk, not a moral statement; throughout this study, lives lost and injuries sustained are reported also as raw counts, never subsumed entirely into a dollar figure. Second, the VSL captures mortality only; the long-term medical and disability burden of the 20,000-plus injured — lost labour-force participation, lifetime care — is carried separately in the indirect ledger to avoid double counting. Table III.2 assembles the full direct block.

**TABLE III.2 — IRAN: DIRECT COST COMPONENTS (CONSTANT-2026 USD)**

| Code | Component | Basis | Value ($B) | Conf. |
|---|---|---|---|---|
| $D^1$ | Incremental military | ~1,770 missiles + 3,955 drones + 4-mo ops | 4.0 | L |
| $D^2$ | Physical capital destroyed | energy, industry, nuclear, housing, hardware | 130.0 | M |
| $D^3$ | Mortality | 5,000 deaths × VSL $0.50M | 2.5 | M |
| $D^4$ | Morbidity | 20,000 injuries × $75k | 1.5 | L |
| $D^5$ | Emergency outlays | humanitarian + 3.2M displaced | 4.0 | L |
| **Direct total (locked in 2026)** | | | **142.0** | |

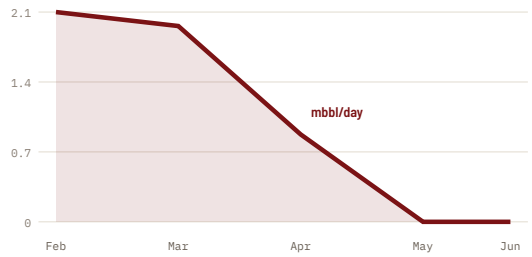
*$D^2$ counted once as the reconstruction-need core; at the FDD bare floor ($91B) the direct total falls to ~$103B. Source: AHRC computation.*

## 3.4 Output, oil, and the inflation tax

The indirect costs eclipse the physical destruction over the medium term, and they are dominated by a single term: the output gap. It is the present value of the entire shortfall in GDP relative to the counterfactual — about $26.7 billion in 2026 alone, accumulating to roughly $134.5 billion by 2030. Because the probability-weighted path keeps Iran below trend in every year of the horizon, this gap never closes; and at the near-zero real discount rate adopted throughout, almost none of it is discounted away. It is, in effect, a decade of lost growth compressed into a single present value.

The proximate driver was the severing of the oil trade. Iran had pushed crude exports to roughly 2.1 million barrels per day in the weeks before the war, drawing down storage. The US naval blockade that began on 13 April then stranded the export fleet: by May, seaborne crude exports had fallen effectively to zero. Oxford Economics estimated the blockade severed some 70 percent of Iran's export income, at a cost of $435 to $500 million per day; monthly oil revenue collapsed from over $4 billion to under $200 million, while more than $15 billion in crude sat stranded at sea and damage to southern fields cut production by a further 15 to 20 percent.[25] Figure III.3 captures the speed of that collapse.

**FIG III.3** Iran crude-oil exports collapse




From 2.1 mbbl/d (pre-war) to zero by May under the naval blockade. Source: FDD; OPEC; EIA.

The figure traces a near-vertical descent: exports held close to their pre-war level through early March, then fell away as the Strait of Hormuz crisis and the April blockade took hold, reaching zero by May. For a state that funds roughly half its budget from hydrocarbons, the loss of this revenue was not merely a trade shock but a fiscal emergency — and the government's response transmitted the damage to every household.

With oil revenue gone and no access to international capital markets, the state turned to the printing press. It monetised its deficit, expanding the money supply by more than 40 percent year-on-year and levying, in effect, a brutal inflation tax on its own population.[26] The free-market rial, already near 1.4 million to the dollar before the war, sank toward 1.8 million by late April; annual inflation accelerated toward 69 percent on the IMF's reckoning, with staple-food prices more than doubling and the central bank forced to issue a 10-million-rial note simply to keep pace with prices.

This is the anatomy of a fiscal-monetary doom loop. The blockade cut oil revenue; the lost revenue forced deficit monetisation; the money creation drove inflation and currency collapse; the collapsing currency raised the cost of the imports Iran still required and eroded real tax receipts, widening the deficit again. Each turn of the loop deepened the next. The human consequence was a food-security crisis of a severity not seen since the Anglo-Soviet occupation of 1941: with staple prices up well over 100 percent, the minimum monthly wage fell below the equivalent of ninety dollars, and basic nutrition moved beyond the reach of a swelling share of the population. These are the channels through which an abstract "output gap" became, for ordinary Iranians, a collapse in the standard of living.

The financial system seized in sympathy. The Tehran Stock Exchange was shuttered for an unprecedented eight weeks to mask the destruction of corporate asset values, while more than $100 billion in Iranian assets remained frozen abroad — in China, Iraq, and Qatar — leaving the central bank without the reserves to defend the currency.[27] A methodological note governs what follows: the output gap already internalises most of the investment, trade, and financial damage just described, so adding those channels again at full value would double-count. The model therefore adds only the extra-GDP residual of each — the portion lying outside measured domestic output.

It is this dynamic, more than the opening strike, that explains why Iran's output gap persists where Israel's and America's close. A modern, diversified, capital-market-connected economy can finance a rebound: it borrows, recapitalises, and grows its way back to trend within a year or two. Iran can do none of these things. It cannot borrow abroad; it cannot lawfully import the capital goods reconstruction requires; and the talent that would lead a recovery is emigrating. The result is not a V-shaped contraction but a step down to a permanently lower path — the defining feature of the expected trajectory in Figure III.1, and the reason Iran's medium-term cost is more than double its first-year figure.

A natural objection is that the oil trade, at least, should recover quickly once the blockade lifts. The Islamabad Memorandum did reopen the strait, and the US Treasury issued licences permitting Iranian energy sales; exports began to resume in late June. But three frictions blunt the rebound. The southern fields damaged in the campaign cannot be restored to full output for months; the buyers, insurers, and shippers who fled the war price its return cautiously; and the sanctions relief itself remains contingent on a final agreement that, as of mid-2026, was still unsigned. The model therefore assumes a partial, gradual recovery of oil revenue across 2027 to 2030 — neither the instant snap-back the optimists assume nor the permanent zero the pessimists fear — and it is this assumption, as much as any other, that the scenario band in Figure III.5 is built to span.

(25) Oxford Economics estimate, cited in FDD, "Iran's Economic Catastrophe"; pre-war export volumes per OPEC Monthly Oil Market Report and the U.S. Energy Information Administration.
(26) International Monetary Fund, World Economic Outlook, April 2026; monetary and food-price detail from the Statistical Centre of Iran and the Central Bank of Iran via Iran International.
(27) FDD, "Iran's Economic Catastrophe"; Tehran Stock Exchange closure and frozen-asset figures per Al Jazeera and Central Bank of Iran reporting.

## 3.5 Displacement and the environmental legacy

Two slower-moving losses will shape Iran's trajectory well beyond the horizon of this study. The first is displacement. Some 3.2 million Iranians fled Tehran and other targeted cities for the northern provinces, abandoning jobs and stalling the commercial and industrial centres they left behind.[28] The immediate cost is lost productivity and emergency relief; the lasting cost depends on how many ever return.

The second, and potentially graver, is the flight of human capital. The collapse to a per-capita income near $5,000 — together with the destruction of the very industries that employ Iran's engineers, physicians, and technicians — strongly predicts a severe and prolonged exodus of skilled labour across the 2027–2030 window. This is precisely the talent that reconstruction requires, and its departure compounds every other loss. The model captures it as a present-valued residual within the displacement channel, though the true figure could prove far larger.

The labour market was already buckling. Iran's deputy labour minister confirmed at least one million direct job losses, while independent economists put as many as 12 million jobs — nearly half the workforce — at risk from supply-chain paralysis. Compounding the damage, an 88-day regime-imposed internet blackout, used to quell unrest, cost the digital economy an estimated $30 to $80 million per day.[29]

Finally, the strikes on refineries and petrochemical depots left a toxic legacy. The combustion of vast quantities of hydrocarbons released benzene, heavy metals, and per- and polyfluoroalkyl substances into the air, producing a persistent "black rain" over Tehran, acidifying soil, and contaminating municipal water — with a compounding burden of respiratory and dermatological illness that will draw on the health system for decades.[30] The remediation cost is modelled within the environmental channel. Table III.3 assembles the full indirect block on the residual basis described above.

TABLE III.3 — IRAN: INDIRECT COST COMPONENTS, PRESENT-VALUED (CONSTANT-2026 USD)

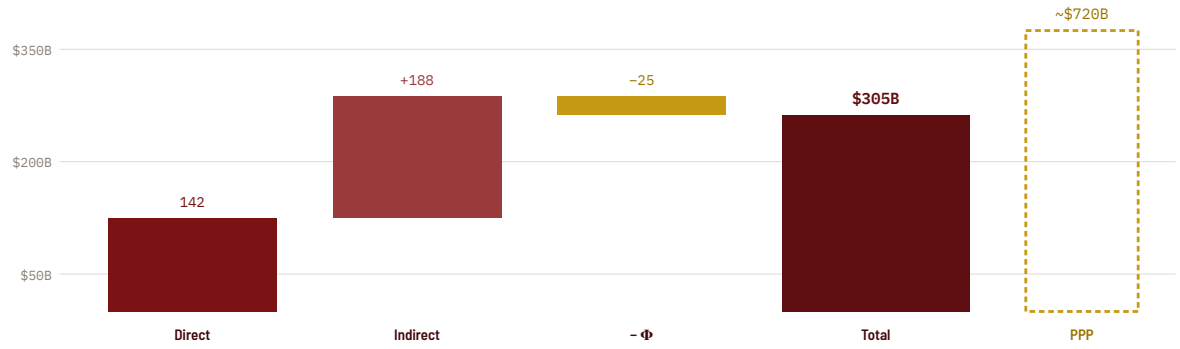
| Code | Component | To 2026 ($B) | To 2030 ($B) | Conf. |
|---|---|---|---|---|
| $I^1$ | Output gap (headline) | 26.7 | 134.5 | M |
| $I^2$–$I^4$ | Investment, trade, energy (extra-GDP) | 9.0 | 15.0 | L |
| $I^5$ | Financial (FX, inflation tax, sovereign) | 4.0 | 8.0 | L |
| $I^6$ | Sectoral (incl. internet blackout) | 5.0 | 6.0 | M |
| $I^7$ | Displacement + brain drain | 5.0 | 15.0 | L |
| $I^8$–$I^9$ | Legacy health + environment | 3.0 | 9.0 | L |
| **Indirect total** | | **52.7** | **187.5** | |

## 3.6 Totals, scenarios, and purchasing power

With every component now estimated, the ledger can be consolidated. Summing the direct block — $142 billion, locked in 2026 — and the present-valued indirect block of $188 billion by 2030, then subtracting the $25 billion overlap-correction term that removes the double-counting between destroyed capital and its own lost output, yields a medium-term total of roughly $305 billion on the market basis, and about $187 billion to the end of 2026. Figure III.4 builds the figure step by step.

(28) United Nations High Commissioner for Refugees situation updates, March–April 2026.
(29) FDD, "Iran's Economic Catastrophe"; internet-blackout cost per NetBlocks and the Iranian communications ministry.
(30) "Assessing the Environmental Harm of the 2026 Iran War," Development Aid (2026); cleanup modelled on UNEP-standard remediation.

**FIG III.4** Building Iran's medium-term total (to 2030, market basis)

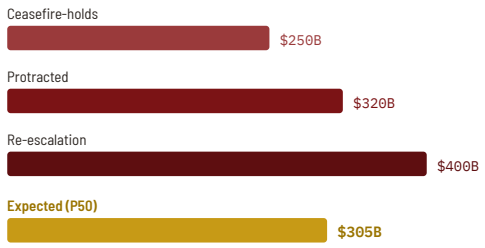



Direct $142B + indirect $188B − overlap $25B = ~$305B (market). The dashed bar is the PPP real-resource view. Source: AHRC computation.

The dashed bar in Figure III.4 marks the study's most consequential valuation choice. Iran's market-rate GDP of $376 billion understates the real volume of resources at stake, because most Iranian output is non-tradable and the official exchange rate is heavily distorted. Measured at purchasing-power parity — where Iran's economy is roughly $1.6 trillion, some 4.3 times larger — the domestic-value components of the loss scale up accordingly, and the medium-term total rises to approximately $720 billion. Neither figure is wrong: the market estimate answers what the loss is worth in internationally tradable terms, while the PPP estimate answers how much real Iranian economic activity was destroyed. This study reports the market figure as its headline and carries the PPP figure as the truer measure of resources lost.

The headline is a probability-weighted average, and the scenarios that compose it differ widely. Under a holding ceasefire the medium-term cost is around $250 billion; under a protracted standoff, around $320 billion; under re-escalation, around $400 billion. Weighting these three at 0.40, 0.35, and 0.25 gives the central $305 billion, and a Monte-Carlo propagation of the underlying parameters — chiefly the physical-capital range and the casualty count — places the tenth-to-ninetieth-percentile band at roughly $210 to $480 billion by 2030.

**FIG III.5** Iran cost to 2030, by scenario




Probability-weighted across the three scenarios (0.40 / 0.35 / 0.25), market basis. The expected value is not a forecast but the mean of a deliberately wide distribution. Source: AHRC computation.

These figures sit comfortably within the published record. At the conservative capital floor the short-term total of about $148 billion matches the Foundation for Defense of Democracies' $144 billion estimate of total economic damage; the medium-term $305 billion falls between the regime's $270 billion claim and the $300 billion reconstruction pledge; and the 2026 output loss of $26.7 billion is consistent with the IMF's 6.1 percent contraction applied to a $376 billion economy.(31) That an independently constructed, bottom-up estimate converges on these top-down anchors is the strongest available evidence that the figure is of the right order of magnitude.

Three things the headline figure deliberately omits are worth naming, since each would push it higher rather than lower. It does not price the proliferation consequences of the damage to Iran's nuclear programme, which are strategic rather than economic and resist

(31) Reconciliation against FDD, "Iran's Economic Catastrophe," and the Islamabad Memorandum reconstruction provision.

monetisation. It does not capture the erosion of state institutional capacity — the administrative, scientific, and managerial capability that a decapitating campaign destroys and that no balance sheet records. And it excludes the regional spillover into Iraq, Lebanon, and the Gulf, which is real but is accounted at the world level in Part VI rather than charged to Iran, to avoid double counting. The $305 billion is therefore a conservative, economically-bounded estimate, not an upper limit on the war's consequences for the Iranian state.

What, in the end, does $305 billion mean for Iran? It is not a bill to be paid in a single year, nor a sum that can be borrowed and amortised. It is the present value of a decade in which the country produces less, exports less, and rebuilds less than it otherwise would have — a loss equal to roughly 81 percent of everything the Iranian economy generated in the year before the war, layered onto a society already hollowed by sanctions and inflation. The dollar figure, however carefully constructed, is ultimately a compression of that lived reality: the shuttered factories, the darkened grid, the emptied classrooms, and the engineers boarding flights from which they will not return. The chapters that follow show that no other party to the war — not Israel, not the United States, not even the world economy in relative terms — bore anything approaching this burden.

**THE BOTTOM LINE — IRAN**

The economic cost to Iran reaches roughly $187 billion to end-2026 and $305 billion by 2030 on the market basis — about 81 percent of pre-war GDP — and approximately $720 billion on a purchasing-power-parity basis. Direct destruction accounts for nearly half; the rest is an output gap that, uniquely among the combatants, persists to the end of the decade. In raw human terms: 3,500 to 6,000 dead, up to 26,500 injured, and 3.2 million displaced.

PART FOUR

# Israel

PART IV · ISRAEL

# Resilient, but expensive

Israel's experience inverts Iran's almost point for point. Where Iran was a fragile economy shattered at its foundations, Israel was a strong one stress-tested at its surface; where Iran's capital was destroyed, Israel's was largely defended; and where Iran's output gap stays open for a decade, Israel's closes within two or three years. The war was nonetheless expensive — an estimated $59 billion to the end of 2026 and $135 billion by 2030 — but that figure, roughly a quarter of a single year's output, is a fraction of the blow absorbed by Tehran, and it falls in entirely different places. Israel's cost is not rubble; it is the price of interception, the opportunity cost of a mobilised reserve army, and the fiscal hangover of financing both.

This chapter follows the same six-step construction as the last. It opens with the strong pre-war baseline against which Israel's losses are measured, then turns to the extraordinary economics of missile defence, the limited physical destruction recorded in the state's own compensation register, the human toll, the indirect drag of mobilisation and sectoral shutdown, and finally the consolidated total — with the recovery dynamics that make Israel's medium-term burden so much lighter than Iran's.

## 4.1 The counterfactual baseline

On the eve of the war, Israel's economy was widely judged to be completing a successful soft landing. Growth was recovering, the labour market was structurally tight, inflation was moderating, and the debt-to-GDP ratio was falling on the back of the fiscal consolidation undertaken between 2022 and 2024.(32) The Bank of Israel's pre-war projection put real GDP growth at 3.8 percent for 2026, accelerating to 5.5 percent in 2027; the Ministry of Finance was more optimistic still at 5.2 percent, and the IMF expected at least 3.5 percent. This study takes a central counterfactual of roughly 4.5 percent for 2026 — a economy with genuine momentum.

The dollar baseline is correspondingly robust. With a population of 10.31 million and a nominal GDP near $540 billion, Israel's per-capita output of about $52,400 placed it firmly among advanced economies, and that figure anchors the income-scaled valuation of life used in Section 4.4.(33) Fiscally, the draft 2026 budget had set a deficit ceiling of 3.9 percent of GDP — the benchmark against which the war's fiscal damage, examined in Section 4.5, must be read. Unlike Iran, Israel entered the war with deep access to international capital markets and an investment-grade credit rating, the very tools of recovery that Tehran lacked.

Monetary conditions reinforced that strength. The Bank of Israel had held its benchmark rate at 4.0 percent, having begun a cautious easing cycle, and expected inflation to drift below 2 percent by mid-year as the shekel's earlier appreciation fed through. This matters for the cost estimate in a subtle but decisive way: an economy with anchored expectations, a credible central bank, and falling inflation has the policy room to absorb a shock without triggering a wage-price spiral — exactly the room Iran did not possess. The war would test that room, but Israel entered it from a position of monetary credibility that shaped how transient the eventual damage proved.

The labour market deserves particular emphasis, because it is the channel through which the war did most of its economic work. Israel entered 2026 at effectively full employment, with chronic shortages of skilled workers and rapid wage growth — a tightness compounded by the continued absence of Palestinian labourers from construction and agriculture. An economy operating at capacity has no slack to cushion a supply shock: when the war pulled workers into uniform and shut whole sectors down, there was no pool of idle labour to absorb the disruption, which is precisely why a relatively brief conflict produced an output gap as large as four percent of GDP. The same tightness that signalled pre-war strength became, under mobilisation, the mechanism of the loss.

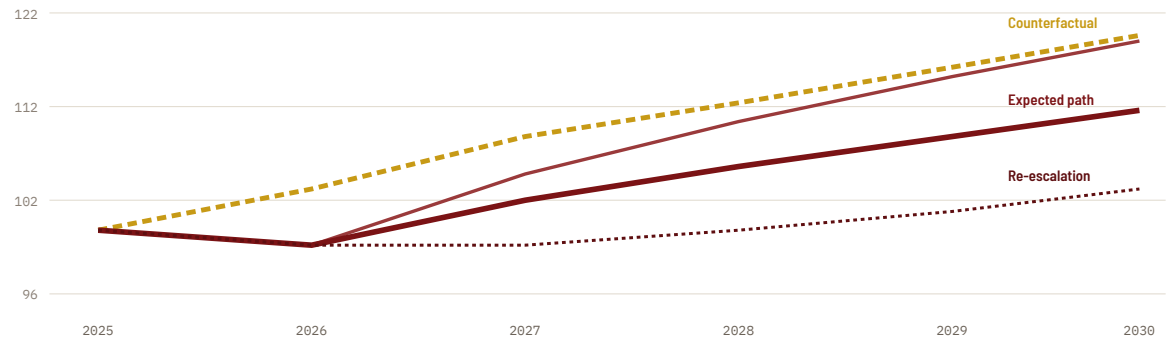
This pre-war strength was hard-won, and worth naming precisely because it is what the war consumed. The fiscal consolidation of 2022 to 2024 had bent the debt-to-GDP ratio back onto a downward path after the shocks of the early decade, restoring the headroom the war would now spend. It is worth stating plainly what that headroom bought: the ability to run a 5-percent deficit for a year without a financing crisis, to compensate 28,000 damaged households without emptying the treasury, and to keep borrowing at investment-grade rates while at war. Each is a luxury Iran could not afford, and together they explain why a same-sized initial shock produced such divergent medium-term costs.

(32) Bank of Israel, Research Department Staff Forecast, March 2026; see also Bank of Israel, "The Economy and Economic Policy During the War" (2026).

External assessments converged on this reading. The IMF, while cutting its Israel forecast, characterised the downside risks as contained and the recovery as delayed rather than derailed; S&P's decision to affirm Israel's rating with a stable outlook even at the height of the war rested explicitly on the assumption that growth would rebound to 5.9 percent in 2027 as reservists demobilised.(34) The market, in other words, priced Israel's shock as transient from the outset — a judgement this study's scenario weighting reflects, while giving real weight to the re-escalation tail that those benign assumptions discount.

The war interrupted that trajectory sharply. The Bank of Israel warned that the conflict would inflict a contraction akin to, or exceeding, the 3.4 percent shortfall the economy had suffered during the late-2025 Gaza operations.(35) This study models a 2026 output gap of roughly 4 percentage points against the counterfactual — severe, but, crucially, front-loaded. Figure IV.1 traces the divergence.

**FIG IV.1** **Israel real GDP — counterfactual versus the war scenarios**




Index, 2025 = 100. Unlike Iran, every Israeli scenario re-converges toward trend by 2030; the gap is sharp but transient. Source: AHRC computation on Bank of Israel and IMF projections.

The contrast with Iran's Figure III.1 is the heart of this chapter. There, the scenarios fanned downward and stayed there; here, even the re-escalation branch bends back toward trend, and the ceasefire branch nearly closes the gap by 2028. The reason is structural: an economy that can borrow, recapitalise, and demobilise recovers; one that cannot, does not. The numbers behind the chart are set out below.

**TABLE IV.1 — ISRAEL: COUNTERFACTUAL PATH AND THE EXPECTED OUTPUT GAP**

| Metric | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|
| Counterfactual growth (%) | — | +4.5 | +5.0 | +3.5 | +3.5 | +3.5 |
| Counterfactual GDP ($B) | 517 | 540 | 567 | 587 | 607 | 629 |
| Expected output gap (pp) | — | 4.0 | 4.0 | 2.9 | 2.2 | 1.8 |
| Annual output loss ($B) | — | 21.6 | 21.3 | 15.8 | 11.7 | 9.5 |

*Each percentage point of gap ≈ $5.4B. Probability-weighted across the three scenarios. Source: AHRC computation on BoI / IMF.*

## 4.2 The economics of interception

The single most distinctive feature of Israel's war was economic asymmetry in the sky. Iran's operational doctrine was to saturate Israel's layered air defences — Iron Dome for short-range rockets and drones, David's Sling for medium ranges, and the exo-atmospheric Arrow-2 and Arrow-3 for ballistic missiles — with overwhelming volumes of comparatively cheap projectiles. The defende-

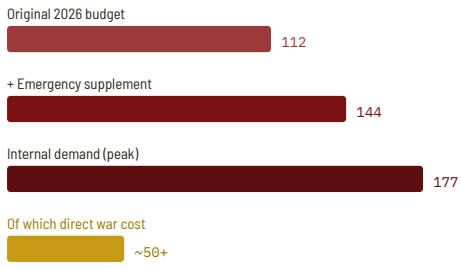
(33) International Monetary Fund and Bank of Israel data; population and per-capita figures for 2026.
(34) S&P Global Ratings, "Israel 'A/A-1' Ratings Affirmed; Outlook Stable" (May 2026).
(35) Bank of Israel, "Bank of Israel slashes growth prospects as Iran war takes toll on economy," March 2026.

rs had no choice but to answer cheap threats with extraordinarily expensive interceptors.

The unit economics are stark. An Iron Dome Tamir interceptor costs $50,000 to $100,000; because doctrine calls for firing two at each threat, the cost per interception runs to $100,000–$150,000. A David's Sling Stunner runs $700,000 to $1 million, and an Arrow interceptor between $2 million and $3.5 million — each fired, routinely, to destroy an incoming missile costing a fraction as much.(36) Analysis by the Royal United Services Institute found that the US–Israel–Gulf coalition expended 11,294 munitions in the first sixteen days alone, at an aggregate cost of roughly $26 billion, of which some $19 billion was spent purely on high-end interceptors. Israel's Arrow inventory was projected to be exhausted by 27 March, its David's Sling stock by 6 April, and even its far more numerous Iron Dome interceptors by 1 June, absent emergency American resupply.

This depletion is itself an economic event, and it is the channel through which the United States enters Israel's ledger. The munitions that kept Israeli cities standing were, in large part, drawn down from or backfilled by American stocks — a transfer examined from Washington's side in Part V, and one that lowers Israel's fiscal burden without reducing the real resources the war consumed. Figure IV.2 shows how the defence budget itself responded.

**FIG IV.2** **Israel defence budget, 2026 (NIS bn)**




The 112bn-NIS peacetime budget swelled toward 177bn at the height of operations. Source: Ministry of Finance estimates via the Jerusalem Post.

The peacetime 2026 defence budget of 112 billion shekels — already elevated, at 7.8 percent of GDP, by years of regional conflict — was rendered obsolete within days.(37) Demand from the defence establishment swelled toward 177 billion shekels; the Ministry of Finance estimated a peak burn rate of 1.5 billion shekels per day, with total direct military costs comfortably breaching 50 billion shekels — roughly $14 billion at the wartime exchange rate. To finance the tempo, the government approved an emergency 32-billion-shekel supplement, ring-fencing a special reserve dedicated to wartime outlays. This study carries Israel's direct military cost at $16 billion, recognising that the headline interceptor figures are coalition-wide rather than Israel-specific.

The interceptor crisis exposed a strategic dependency that no Israeli budget can fully price. The rate at which Israel expended Arrow and David's Sling interceptors outran any plausible domestic — or even allied — production schedule; within weeks, the country's air defence depended on the pace at which the United States could ship replacements. This is the "command of the reload" that defined the campaign: deterrence rested not on the stock of interceptors but on the flow, and that flow ran through Washington. For Israel the economic implication is twofold — a direct cost in the munitions consumed, and a harder-to-quantify strategic cost in the demonstrated limits of self-sufficiency, which will shape defence procurement, and defence budgets, for years.

There is a broader lesson in the arithmetic of interception that bears on the cost of every future war of this kind. When a $100,000 interceptor is the standard reply to a $20,000 drone or a cheaply produced ballistic missile, the defender loses the economic exchange even when it wins the engagement — and an adversary that understands this can impose disproportionate cost simply by forcing the defender to keep firing. Israel won every important engagement of the air war; it nonetheless spent, alongside its partners, some $19 billion on interceptors in sixteen days. That is the price of an air-defence doctrine built for episodic threats colliding with an adversary willing to sustain saturation, and it is a structural feature, not a one-off, of the cost recorded in this chapter.

These wartime sums sit atop an already-heavy standing burden. Even before the war, Israel devoted some 7.8 percent of GDP to defence — a share nearly double its 2022 level and among the highest in the developed world, the legacy of a decade of near-continuous conflict.(38) The 2026 campaign did not so much create that burden as detonate it: the emergency supplements and the multi-year procurement surge to replenish interceptors will, on the Stiglitz–Bilmes logic of ratcheting

(36) Defence-industry unit-cost data; Royal United Services Institute, "Over 11,000 Munitions in 16 Days of the Iran War: 'Command of the Reload' Governs Endurance" (2026).
(37) Stockholm International Peace Research Institute, Trends in World Military Expenditure 2025 (2026); 2026 budget figures per Israeli Ministry of Finance via the Jerusalem Post.
(38) Stockholm International Peace Research Institute, Trends in World Military Expenditure 2025 (2026).

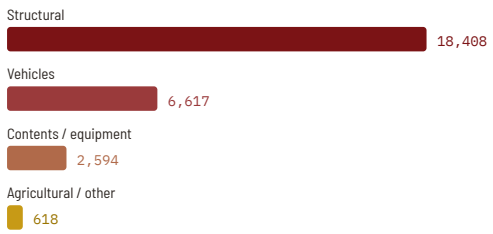
base budgets, embed a permanently higher level of military spending into the public finances long after the guns fall silent. That permanent step-up is a genuine cost of the war, even though it materialises in budgets not yet written and is therefore excluded from the conservative headline figure.

## 4.3 Destruction and the Karnit register

Because interception worked, Israel's physical destruction was a small fraction of Iran's — and, unusually, it is unusually well documented. The Israel Tax Authority administers the statutory Property Tax and Compensation Fund, known as Karnit, which serves as the official register of all war-related damage claims and so provides an exceptionally reliable dataset for loss modelling. In response to the war the Knesset passed the Economic Assistance Plan Law on 4 May 2026, formalising the compensation framework.(39)

By the cessation of hostilities the fund had registered 28,237 property-damage claims. Their composition reveals the nature of the destruction: 18,408 claims for direct structural damage to residential, commercial, and industrial buildings; 6,617 for vehicles; 2,594 for contents and business equipment; and 618 for agricultural and other losses.(40) Figure IV.3 sets out the breakdown.

**FIG IV.3 Karnit damage claims, by type**




28,237 claims in total. Source: Israel Tax Authority.

The geographic distribution is as telling as the totals. Iran's long-range ballistic missiles threatened the entire sovereign territory, and the claims cluster squarely on Israel's economic core: the Tel Aviv region processed some 8,058 claims, Ashkelon 6,924, and Be'er Sheva 2,793.(41) Two gaps qualify the figure. First, the Tax Authority has not yet consolidated the aggregate shekel value of the claims, so this study models the civilian property loss at roughly $6 billion from the claim counts and severity mix. Second, and more significant, the financial value of damage to strategic, energy, and military installations is obscured by military censorship and is absent from the public record entirely. Israel's direct physical-capital figure of $6 billion is therefore a documented-civilian floor, not a comprehensive total — though even a generous allowance for censored military damage would leave it an order of magnitude below Iran's.

That the damage clustered on Tel Aviv, Ashkelon, and Be'er Sheva is economically significant well beyond the repair bills. These are not peripheral towns but the country's commercial, financial, and technological heart. The demonstration that Iranian ballistic missiles could reach them — that there was, in effect, no safe geographic zone within Israel's sovereign territory — carried an economic weight far out of proportion to the physical damage itself. It is part of why business confidence, foreign direct investment, and tourism contracted so sharply, and why the true cost of the destruction is felt less in the Karnit claims than in the indirect channels examined in Section 4.5.

The Karnit framework itself merits a note, because it shapes how reliably the damage can be measured. To prevent the appraisal system from collapsing under the volume of claims, the Tax Authority operated a digital fast-track that approved compensation for structural and contents damage below 30,000 shekels within seven days and without a site visit; by the end of hostilities roughly four in five claims had been processed through this channel or already appraised. The administrative efficiency is itself economically valuable — rapid compensation speeds reconstruction and limits the secondary losses of delay — but it also means that, unusually for a war, Israel's civilian property damage is documented in near-real time, lending the $6 billion figure a solidity that Iran's contested, self-reported totals could never attain.

What the Karnit data cannot capture is the damage the state chose not to disclose. Strikes on airbases, naval facilities, and energy infrastructure were subject to strict military censorship, and their financial value is simply absent from the public record. The omission is not trivial: a single damaged air base or refinery can run to hundreds of millions of dollars, and several were reportedly hit. This study's $6 billion physical-capital figure is therefore explicitly a civilian-documented floor, and the true direct destruction is somewhat higher — though, as the chapter's conclusion makes clear, even a generous allowance would not change the central findi-

(39) Israel Tax Authority, "Lion's Roar Compensation Fund Activities" (Government of Israel, 2026); Economic Assistance Plan Law, 4 May 2026.
(40) Israel Tax Authority, claims data via the Jerusalem Post, "Nearly 30,000 property damage claims filed since start of Operation Roaring Lion" (2026).
(41) Israel Tax Authority regional claims data, March–June 2026.

ng, because Israel's cost was never primarily about destroyed capital in the first place.

## 4.4 Human capital

Israel suffered 69 fatalities — 40 military personnel, 28 civilians, and one contractor — and 9,161 injuries, of which at least 1,382 were military.(42) The civilian deaths were concentrated in a handful of catastrophic strikes — a direct missile hit on a synagogue and adjacent residences in Beit Shemesh that killed nine, cluster-munition strikes on a construction site in Yehud and an apartment block in Ramat Gan — that together demonstrated the lethality of even a small number of leaked projectiles against an urban population.

To monetise this loss, the income-scaled Value of a Statistical Life is applied. Scaling the US base of $12.5 million by the ratio of Israeli to American per-capita income, at an elasticity of one, yields an Israeli VSL of approximately $7.0 million.(43) Applied to the 69 fatalities, mortality contributes about $0.48 billion to the direct ledger — a figure that, as in Iran's case, is dwarfed by other components, though for the opposite reason: here it is not that life is valued low, but that the deaths, mercifully, were few. The 9,161 injured impose a larger and longer burden of rehabilitation, disability pensions, and lifetime psychiatric care, carried in the indirect ledger to avoid duplication. Table IV.2 assembles the direct block.

TABLE IV.2 — ISRAEL: DIRECT COST COMPONENTS (CONSTANT-2026 USD)

| Code | Component | Basis | Value ($B) | Conf. |
|---|---|---|---|---|
| D[1] | Incremental military | ≈50bn NIS campaign cost, incl. interceptors | 16.0 | H |
| D[2] | Physical capital destroyed | Karnit 28,237 claims + censored strategic | 6.0 | M |
| D[3] | Mortality | 69 deaths × VSL $7.0M | 0.48 | M |
| D[4] | Morbidity | 9,161 injuries, within-horizon care | 1.5 | L |
| D[5] | Emergency outlays | evacuation, civil defence, hosting | 2.0 | L |
| **Direct total** | | | **26.0** | |

*US-supplied munitions are a US→Israel transfer, counted in Part V, not here. Source: AHRC computation on MoF, RUSI, Israel Tax Authority.*

## 4.5 Reservists, output, and the fisc

If Iran's indirect costs were a story of destroyed capital, Israel's are a story of withdrawn labour. The single largest constraint on the wartime economy was the sudden mobilisation of roughly 100,000 reservists — prime-age, high-productivity workers pulled from the technology, finance, and advanced-manufacturing sectors that drive Israeli output.(44) The Ministry of Finance valued the economic cost of drafting a single reservist at nearly 50,000 shekels a month — an extraordinary sum that reflects the high opportunity cost of removing skilled labour from a service economy — putting the total opportunity cost of the call-up at some 660 million shekels a week.

The composition of that withdrawal mattered as much as its scale. Israel's comparative advantage lies in a high-skill technology sector whose output is bound up in the specific human capital of its workers; removing 100,000 of them — disproportionately engineers, managers, and specialists — does not merely subtract labour-hours but interrupts projects, delays product cycles, and severs the tacit coordination on which knowledge work depends. A reservist returns to his desk; the quarter of lost momentum does not return with him. This is why the Finance Ministry's 50,000-shekel monthly figure, high as it already is, may understate the true opportunity cost of pulling skilled labour out of a modern service economy.

Layered on top was a broader demand shock. In the opening weeks the Finance Ministry estimated the cost of the economic shutdown at 9.5 billion shekels a week; as the home front adapted, this stabilised at a still-punishing 2.4 billion shekels weekly. Credit-card spending fell 19 percent in the first ten days. Tourism and civil aviation froze almost entirely as international carriers suspended service, and the construction sector — already short of Palestinian labour — was further paralysed as foreign workers departed.(45) These channels are not

(42) Aggregated casualty data cross-referenced across human-rights monitors, media trackers, and official statements; see "Casualties of the 2026 Iran War."
(43) Analytical calculation following Viscusi and Masterman, "Income Elasticities and Global Values of a Statistical Life"; Israeli per-capita income basis.
(44) Israeli Ministry of Finance estimates via the Jerusalem Post; reservist mobilisation and opportunity-cost figures.
(45) Bank of Israel and Ministry of Finance estimates; sectoral and consumption data, 2026.

added to the output gap; they are its composition. The output gap of $21.6 billion in 2026, already reported in Table IV.1, is precisely the sum of this withdrawn labour and frozen activity.

Three sectors bore the brunt. Tourism and aviation, which had been recovering, collapsed to near zero as foreign carriers suspended Tel Aviv service and the country's air links to global markets were severed — a loss felt not only in hotel and airline revenue but in the business travel that underpins an export economy. Construction, already constrained by the prior absence of Palestinian labour, seized entirely as foreign workers departed. And retail contracted in step with consumer confidence, the 19-percent fall in card spending serving as a real-time index of a population sheltering rather than spending. None of these is an additional line in the ledger; each is a strand of the same output gap, named here so that the abstraction acquires texture.

A distinct, long-tailed burden attaches to the 9,161 wounded. Israel's advanced military and civilian health systems produced a high survival rate, but survival with serious injury implies decades of rehabilitation, disability pensions, and — for a population subjected to sustained ballistic bombardment — a substantial mental-health and trauma caseload. The actuarial value of this lifetime care cannot be fixed until the severity distribution of injuries is known, but it is real, it is large, and it falls disproportionately on the public purse rather than on private insurers. The study carries a present-valued allowance for it within the legacy-health channel, alongside the smaller environmental costs, in the residual lines of Table IV.3.

Displacement, by contrast, was modest — and the contrast with Iran is itself revealing. Only about 3,500 Israelis were evacuated, concentrated in the municipalities that suffered direct catastrophic hits, with the state housing roughly sixty percent of them in commandeered hotels. The figure is small not because the threat was localised — Iranian ballistic missiles reached the entire country — but precisely because they did, leaving nowhere obviously safer to flee to; Israelis sheltered in place rather than becoming refugees. Where Iran displaced 3.2 million, Israel displaced a few thousand, and that single ratio captures the difference between a war fought across one's own territory and a war fought against one's cities from afar.

The fiscal consequences were severe and will outlast the fighting. The collision of surging defence spending, collapsing tax revenue, and mounting compensation payouts blew through the 3.9 percent deficit ceiling: the official target rose to 5.1 percent, with analysts projecting 5.3 to 5.5 percent, while the debt-to-GDP ratio — a manageable 68.5 percent in 2025 — breached 70 percent.(46) The rating agencies responded in character: Fitch downgraded Israel to 'A' with a negative outlook in March, citing the unpredictable impact on public finances, even as S&P affirmed its 'A/A-1' rating with a stable outlook in May on the assumption of a swift rebound. The lasting cost of this fiscal deterioration is the debt-service burden, projected to reach 64 billion shekels a year by 2027 — a permanent drag that diverts capital from growth-enhancing investment.

The mechanics of the rating action deserve emphasis, because they convert a one-time war into a recurring cost. A downgrade and a wider sovereign-risk premium raise the interest rate on the entire stock of government debt as it rolls over, not merely on new war borrowing — so a temporary fiscal shock leaves a permanent wedge in debt-service costs. This is the channel through which the war's fiscal damage outlives the fighting, and it is why the financial line in Israel's indirect ledger grows from $2 billion in 2026 to $10 billion by 2030 even as the output gap itself narrows. Table IV.3 collects the indirect ledger.

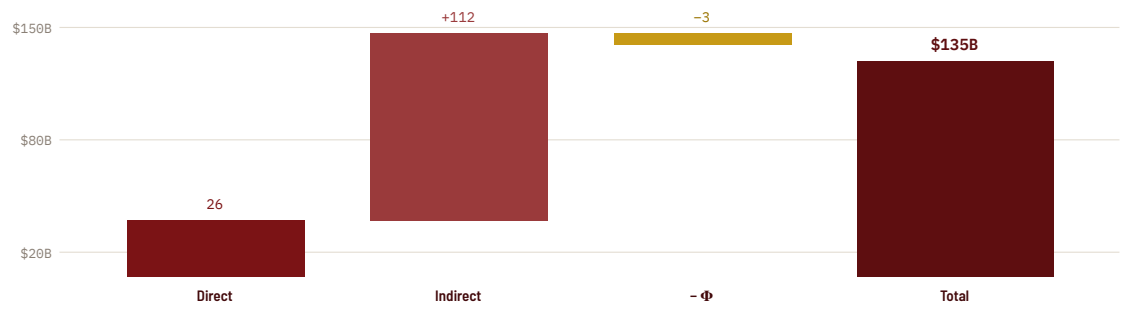
TABLE IV.3 — ISRAEL: INDIRECT COST COMPONENTS, PRESENT-VALUED (CONSTANT-2026 USD)

| Code | Component | To 2026 ($B) | To 2030 ($B) | Conf. |
|---|---|---|---|---|
| $I^{1}$ | Output gap (reservists + shutdown) | 21.6 | 78.9 | M |
| $I^{2}$–$I^{3}$ | Investment, tourism & aviation | 5.0 | 10.0 | M |
| $I^{5}$ | Financial (shekel, rating, debt service) | 2.0 | 10.0 | M |
| $I^{6}$ | Other sectoral (construction, retail) | 2.0 | 4.0 | L |
| $I^{7}$–$I^{9}$ | Displacement, legacy health, environment | 3.0 | 9.0 | L |
| **Indirect total** | | **33.6** | **111.9** | |

## 4.6 Totals, scenarios, and resilience

Consolidating the ledger, Israel's direct cost of $26 billion and present-valued indirect cost of $111.9 billion by 2030, less a $3 billion overlap correction, yield a medium-term total of about $135 billion, and roughly $59 billion to the end of 2026. Figure IV.4 builds the figure.

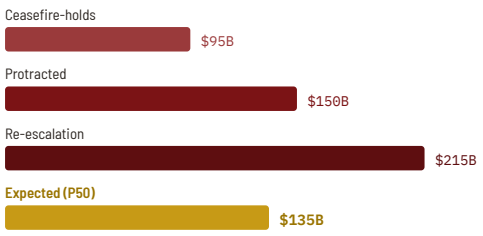
**FIG IV.4 Building Israel's medium-term total (to 2030)**




Direct $26B + indirect $112B − overlap $3B ≈ $135B. Source: AHRC computation.

The headline conceals a wide scenario range: about $95 billion if the ceasefire holds, $150 billion under a protracted standoff, and $215 billion under re-escalation — the last reflecting renewed mobilisation and a deeper, longer output gap. The probability-weighted central estimate is $135 billion, with a tenth-to-ninetieth-percentile band of roughly $95 to $200 billion. One memo item adjusts the interpretation rather than the figure: of the more than $23 billion in emergency US arms and aid extended to the region, an estimated $10 to $15 billion backfilled Israeli interceptors. That transfer lowers Israel's fiscal burden but not its real economic loss, and it is counted as a cost to the United States in Part V. Figure IV.5 sets the scenarios side by side.

**FIG IV.5 Israel cost to 2030, by scenario**




Probability-weighted across the three scenarios, market basis. The re-escalation branch is more than double the ceasefire branch. Source: AHRC computation.

What ultimately separates Israel's $135 billion from Iran's $305 billion is not the severity of the initial shock — in output-gap terms the first-year blows were comparable — but the capacity to recover. Israel could borrow to finance reconstruction, demobilise its reservists back into a functioning labour market, and draw on allied resupply and investment-grade credit. Its sectors froze but were not destroyed; its workers were redeployed, not killed or exiled. The figures reconcile cleanly with the public record: the $16 billion direct military cost matches the Ministry of Finance's reporting of more than 50 billion shekels, and the 2026 output loss aligns with the Bank of Israel's roughly 4-percent-of-GDP estimate.[47]

Two caveats temper the relative optimism of this chapter. First, the $135 billion excludes the value of strategic-site damage hidden by military censorship, which could add several billion more. Second, and more important, the entire estimate is conditional on the recovery actually materialising — on the ceasefire holding, the reservists demobilising into a functioning labour market, and confidence returning. The re-escalation scenario, in which none of these occurs, carries a cost of $215 billion, and the fragility of the Islamabad Memorandum means that branch is far from negligible. Israel's resilience is genuine, but it is a resilience contingent on peace: a renewed war would erode it quickly, and with it the comfortable distance between Israel's burden and Iran's.

Set beside Iran, then, Israel's war was costly but survivable, and the comparison is instructive precisely because the two economies began the same conflict from opposite conditions. The shock that opened a perma-

industrial base was, in Israel, largely intercepted in the sky; and the talent that is now fleeing Iran was, in Israel, mobilised and then sent home. The dollar figures — $305 billion against $135 billion — capture that divergence, but the deeper lesson is about resilience itself: it is bought in advance, with credible institutions, fiscal headroom, and allied support, none of which can be improvised once the missiles are already in the air.

A word on the uncertainty around these figures is in order. The $135 billion central estimate is the median of a Monte-Carlo distribution built by varying the key parameters — the depth and duration of the output gap, the value of the censored military damage, the pace of demobilisation — across their plausible ranges. The resulting tenth-to-ninetieth-percentile span of $95 to $200 billion is wide, and deliberately so: an honest war-cost estimate, made months after the event and conditional on an unresolved peace, should wear its uncertainty openly rather than disguise it behind a single confident number. What the distribution does establish is that Israel's cost sits firmly in the low hundreds of billions — an order of magnitude below the world figure of Part VI, and comfortably below Iran's, in every branch of the scenario tree.

In sum, Israel emerges from the 2026 war economically bruised but structurally intact. It spent heavily to defend itself, surrendered a quarter of a year's growth, and acquired a fiscal hangover that will shadow its budgets for years — but it kept its productive base, its institutions, and its access to the capital and allies that finance recovery. The $135 billion is a real cost, larger than that of any single previous Israeli conflict, yet it is the cost of a war survived rather than a system broken. The chapters that follow turn to the two actors for whom the calculus is different again: the United States, whose battlefield losses were slight but whose fiscal tail is vast, and the world economy, which quietly paid the largest bill of all.

**THE BOTTOM LINE — ISRAEL**

The economic cost to Israel reaches roughly $59 billion to end-2026 and $135 billion by 2030 — about a quarter of a single year's GDP, and well under half Iran's burden. Layered air defence capped the physical destruction; the cost is concentrated instead in interception, a mobilised reserve army, frozen sectors, and a fiscal hangover. In raw human terms: 69 dead, 9,161 injured, and some 3,500 evacuated. Above all, Israel's wound closes — its output gap is sharp but transient — where Iran's does not.

**(47)** Reconciliation against Israeli Ministry of Finance and Bank of Israel reporting, 2026.

PART FIVE

# United States

PART V · UNITED STATES

# A small war, a long bill

For the United States, the 2026 war presents a paradox that the dollar figures only partly resolve. Militarily it was a triumph of stand-off precision: thirteen thousand targets struck, an adversary's strategic infrastructure dismantled, and — by the standards of the post-9/11 wars — almost no American blood spilled. Economically, the immediate cost was modest and the macroeconomic damage smaller still, because a half-century of structural change has rendered the American economy remarkably insulated from oil shocks. And yet the true cost to the United States may be the largest of any belligerent save Iran, because it is back-loaded: it lives not in the four months of fighting but in the decades of veteran care, debt service, and ratcheted defence spending that follow. This chapter therefore ends not with one number but with two — a conservative figure near $200 billion, and a Stiglitz–Bilmes figure that climbs toward a trillion.

The construction follows the now-familiar six steps, but the centre of gravity shifts. The counterfactual and the macroeconomic shock, which dominated Iran's chapter, are almost footnotes here; the weight falls instead on the direct cost of the campaign, the depletion of irreplaceable munitions, the transfers to allies, and above all the long fiscal tail that conventional accounting omits and that this study, at the commissioner's direction, brings fully into view.

## 5.1 The counterfactual and the insulation thesis

The United States entered 2026 as a $32.3 trillion economy growing at a moderate pace.[48] The Congressional Budget Office's pre-war baseline put 2026 real growth between 1.8 and 2.3 percent, settling near 1.8 percent annually thereafter as the stimulus of the 2025 reconciliation act faded; nominal GDP was projected at $32.27 trillion in 2026, rising to $33.65 trillion in 2027. Against a denominator of this size, even substantial war costs register as small percentages — a framing that is essential to reading what follows. A $40 billion military campaign is, to the United States, roughly a tenth of a percent of output; the same sum is a tenth of Iran's entire economy.

The macroeconomic story turns on a single, well-documented fact: the modern United States is structurally insulated from oil shocks to a degree unimaginable a generation ago. Research by the Federal Reserve Bank of Dallas models that a 15-percent global oil-supply disruption, which under 1980 conditions would have cut US real GDP growth by 5.6 percentage points, reduces it today by just 0.26 points.[49] Two changes drive the reversal. First, the shale revolution turned the United States into a net oil exporter in late 2019, so that a price spike now generates offsetting domestic income even as it raises consumer costs. Second, oil's share of GDP has fallen from 8.3 percent in 1980 to 3.9 percent in 2024. The interaction is powerful: the Dallas Fed estimates that, had the United States retained its 1980 trade balance and energy intensity, the 2026 shock would have cut real GDP by more than five points instead of a quarter of one.

That insulation does not mean the war was costless to the federal balance sheet — only that it worked through the budget rather than through output. The United States entered 2026 already running a deficit projected near $1.85 trillion, with net interest outlays climbing toward 4.6 percent of GDP over the coming decade. A war financed entirely by borrowing, in an environment of elevated interest rates, therefore lands not on a healthy fiscal position but on a stretched one, and the interest it adds compounds a pre-existing trajectory. This is the backdrop against which the long fiscal tail of Section 5.6 must be read, and it is the reason a war that barely dented output can nonetheless impose a serious cost.

This insulation thesis is the analytic key to the chapter. It means the indirect macroeconomic cost — the term that dominated Iran's ledger and will dominate the world's — is, for the United States, comparatively minor. The American cost is concentrated instead at the two ends of the time horizon: the immediate, front-loaded expense of the campaign, and the distant, back-loaded liabilities it created. Table V.1 records the baseline.

(48) Congressional Budget Office, The Budget and Economic Outlook: 2026 to 2036 (Washington, DC: CBO, February 2026); International Monetary Fund, World Economic Outlook, April 2026.
(49) Federal Reserve Bank of Dallas, "How Times Have Changed: The Impact of the 2026 Iran War on the U.S. Economy," Working Paper 2615 (2026).

TABLE V.1 — UNITED STATES: COUNTERFACTUAL MACRO BASELINE

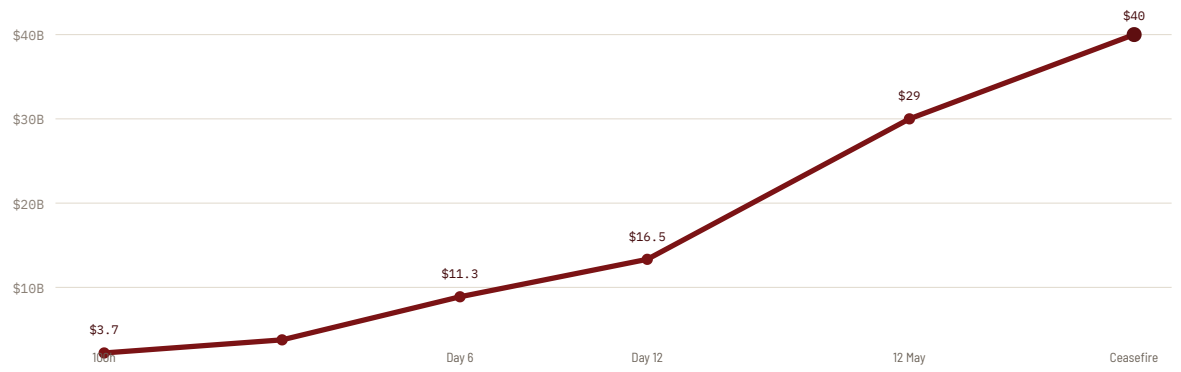
| Metric | 2026 | 2027 | 2028–30 (avg) |
|---|---|---|---|
| Real GDP growth (%) | 1.8–2.3 | 1.9 | 1.8 |
| Nominal GDP ($tn) | 32.27 | 33.65 | ~36 |
| War-attributable GDP drag (pp) | −0.26 | ~0 | ~0 |
| VSL (cross-country base) | $12.5M | — | — |

*Population 342.9M; per-capita ≈ $94,100. The −0.26pp drag is the Dallas Fed net-exporter estimate. Source: CBO, IMF, Dallas Fed.*

## 5.2 The cost of the campaign

The direct operational cost of Operation Epic Fury was extreme in velocity but bounded in total. Because the campaign relied on standoff weapons fired in a compressed window, the expenditure curve was steeply front-loaded, and the running estimates climbed almost daily as the scope widened. The Center for Strategic and International Studies tracked the escalation: $3.71 billion in the first hundred hours, $11.3 billion by day six, $16.5 billion by day twelve.(50) By 12 May the Pentagon's comptroller testified to a cumulative $29 billion, of which roughly $24 billion was equipment and munitions replacement — a figure that pointedly excluded the cost of repairing US bases struck by Iranian retaliation. Figure V.1 traces the climb.

FIG V.1 US military cost — the escalating series




Cumulative DoD cost, $bn. The CSIS retrospective placed the all-in total at ~$40B ($34–42B). Source: CSIS; DoD comptroller testimony.

Following the June ceasefire, the CSIS published a comprehensive retrospective placing the total additional cost to the Department of Defense at approximately $40 billion, within a confidence interval of $34.2 to $41.5 billion. The figure decomposes into munitions ($26.1 billion), base damage ($4.0 to $9.4 billion), equipment losses ($1.7 to $3.5 billion), and the fuel, security, operational-tempo, and deployment costs of sustaining two carrier strike groups in a high-threat theatre for nearly four months. This study adopts $40 billion as the direct military cost, and treats the louder $100 billion figure asserted by Iran's foreign minister as adversarial rather than analytic.

Platform attrition was real but limited. A Congressional Research Service report documented at least 42 US aircraft lost or severely damaged, including four F-15E Strike Eagles — three of them to friendly fire over Kuwait — an A-10, two KC-135 tankers, an Apache downed by an Iranian drone, and a damaged F-35.(51) The replacement of these airframes, unbudgeted before February, runs to several billion dollars and is folded into the equipment-loss line above rather than counted twice.

Naval costs were elevated by the rapid deployment and sustained operation of two full carrier strike groups — the USS Abraham Lincoln and the USS Gerald R. Ford — held in a high-threat environment for nearly four months.

(50) Center for Strategic and International Studies, "Iran War Cost Estimate Update: $11.3 Billion at Day 6, $16.5 Billion at Day 12" (2026); and "The War May Be Ending. What Did Epic Fury Cost?" (2026).
(51) Congressional Research Service, U.S. Conflict with Iran, CRS Report R48887 (2026).

The CSIS model captured a $170 million deployment cost and a $750 million operational-tempo premium for keeping these multi-billion-dollar assets on station, conducting thousands of sorties and requiring constant at-sea replenishment. These are the hidden running costs of power projection, absent from any headline munition tally but real all the same, and they are embedded in the $40 billion total. They also illustrate a general truth of the American ledger: much of the cost is in sustainment and logistics — the unglamorous machinery of keeping a war going — rather than in the ordnance that makes the news.

Two observations frame the $40 billion campaign cost. The first is that it bought an extraordinary military return: the systematic degradation of an adversary's nuclear, missile, and air-defence infrastructure for roughly a tenth of a percent of American output. By the brutal cost-effectiveness logic of war, Operation Epic Fury was, for the United States, cheap. The second is that the figure is the floor of the direct cost, not the ceiling — it excludes the military construction needed to repair the Gulf bases struck by Iranian retaliation, which the Pentagon pointedly omitted from its own accounting pending host-nation cost-sharing negotiations. The true direct cost is therefore somewhat higher than $40 billion, though not by an order of magnitude.

## 5.3 Munitions and the command of the reload

The most consequential military fact of the war was not what the campaign destroyed but what it consumed. Operation Epic Fury expended 13,629 strike munitions, and the resulting depletion of high-end interceptors and standoff weapons exposed a strategic vulnerability that no single dollar figure captures: the United States can win a high-intensity war, but it cannot quickly rearm for the next one.[52] The strain fell hardest on the Army's Terminal High Altitude Area Defense system: between 190 and 290 THAAD interceptors were fired against a pre-war global inventory of only about 360, depleting up to 80 percent of the stockpile, with replacement delivery measured at 53 months. Table V.2 sets out the key effectors.

TABLE V.2 — SELECTED US MUNITIONS EXPENDED, COST, AND REPLACEMENT LEAD-TIME

| Munition | Fired | Unit cost | Replacement cost | Lead-time |
|---|---|---|---|---|
| THAAD interceptor | 190–290 | $15.5M | $2.9–4.5B | 53 mo |
| Patriot PAC-3 MSE | 1,060–1,430 | $3.9M | $4.1–5.5B | 42 mo |
| SM-3 Block IIA | 130–250 | $28.7M | $3.7–7.1B | 64 mo |
| Tomahawk (TLAM) | 1,000+ | $2.6M | $2.6B+ | 47 mo |
| JASSM-ER | 1,100+ | $2.6M | $2.9B+ | 48 mo |

*FY2026 unit costs. Tomahawk expenditure represents ~⅓ of the global stockpile. Source: CSIS, "Last Rounds?"; Payne Institute.*

The economic significance of these lead-times is strategic, not merely budgetary. With THAAD deliveries having effectively halted between mid-2023 and the war, and with Tomahawk procurement running at roughly a tenth of the quantity expended, the United States emerged from a four-month conflict with critical magazines that will take years to refill — a readiness gap that constrains its posture against peer competitors in the Indo-Pacific and Europe for the remainder of the decade. To finance the rebuild, the White House submitted an $87.6 billion emergency supplemental, the bulk earmarked for procurement and operations, though its final enacted form remained contested in Congress through late June.[53] The supplemental is the financing vehicle for costs already counted, not an additional cost — a distinction Section 5.6 makes precise.

The campaign also drew on the most exotic corner of the American arsenal. Neutralising Iran's deeply buried nuclear facilities required the GBU-57 Massive Ordnance Penetrator — the 30,000-pound bunker-buster deliverable only by the B-2 stealth bomber — flown, as in the June 2025 precedent, from the continental United States in sorties of extraordinary length. The precise 2026 expenditure remains classified, but the operational tempo of strategic bombers, aerial refuelling, and the supporting constellation of intelligence and electronic-warfare aircraft adds a specialised premium that standard munition accounting understates. The broader lesson of the munitions ledger is sobering: a single regional war, however successful, can consume years of American production and leave the arsenal hollow — a

(52) CSIS, "Last Rounds? Status of Key Munitions at the Iran War Ceasefire" (2026); Payne Institute munitions analysis.
(53) White House supplemental request, June 2026; status per Washington Post and Congressional reporting.

strategic cost that dwarfs, in consequence if not in dollars, the figures in this chapter.

The munitions ledger carries a cost that resists the dollar sign entirely. A United States that has expended four-fifths of its THAAD interceptors and a third of its Tomahawk stockpile in a single regional campaign is a United States less able to deter or fight a simultaneous crisis elsewhere — in the Western Pacific against China, or in support of European allies. For the multi-year period during which the magazines slowly refill, the war imposes a strategic-opportunity cost on American grand strategy that is real, consequential, and entirely absent from any budget line. This study does not attempt to monetise that cost, but flags it as among the war's most significant consequences for the United States, and quite possibly larger, in strategic terms, than any figure in this chapter.

## 5.4 Transfers and casualties

Two further direct items complete the front-loaded ledger. The first is the transfer to allies. During the war the United States notified Congress of more than $23 billion in emergency arms sales and military aid to Israel and Arabian Gulf partners, much of it to backfill the interceptor stocks examined in Part IV.(54) In rigorous accounting this is a transfer, not a net world cost: it is a fiscal outflow from the United States and a corresponding inflow to its allies, and it nets to zero at the global level. But at the national level it is unambiguously a cost to the American taxpayer, and it is recorded as such here while being stripped out of the world total in Part VI.

The second is the human cost, which the standoff character of the campaign kept remarkably low. The Defense Casualty Analysis System recorded 13 US military fatalities — nearly half of them in a single KC-135 crash over western Iraq — and 413 wounded, the overwhelming majority of whom suffered minor injuries and returned to duty.(55) Applying the cross-country VSL base of $12.5 million to the fatalities yields an immediate human-capital loss of about $0.16 billion — a small figure in absolute terms, though one that, as the next sections show, vastly understates the true lifetime cost of those casualties. Table V.3 assembles the front-loaded direct block.

TABLE V.3 — UNITED STATES: DIRECT COST COMPONENTS (CONSTANT-2026 USD)

| Code | Component | Basis | Value ($B) | Conf. |
|---|---|---|---|---|
| $D^{1}$ | Military operations | CSIS total, $34–42B range | 40.0 | H |
| $D^{5}$ | Transfers (arms & aid) | CRS R48887, >$23B | 23.0 | H |
| $D^{3}$ | Mortality | 13 deaths × VSL $12.5M | 0.16 | H |
| $D^{4}$ | Morbidity | 413 wounded, within-horizon | 0.10 | H |
| **Direct total** | | | **63.3** | |

The contrast between America's human and financial costs is the starkest in this study, and it anticipates the chapter's central theme. Thirteen deaths and 413 wounded is, by the standards of major war, a mercifully small toll — a testament to the standoff, precision character of the campaign. Yet those few hundred casualties seed a financial liability, through the veterans' system, that may ultimately exceed the entire direct cost of the war. The American war is one in which remarkably few were hurt and the bill is nonetheless enormous, because the bill is not for the fighting itself but for the obligations the fighting created — a point Section 5.6 makes precise.

## 5.5 The indirect macro cost

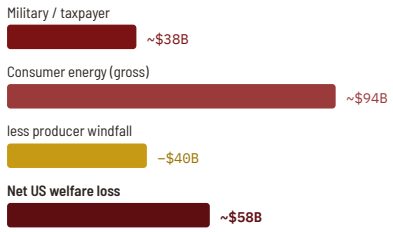
Here the insulation thesis pays off. The headline indirect figure is Moody's Analytics' estimate that the war imposed a $132 billion burden on US taxpayers and consumers — a number frequently cited as "the" cost of the war to America, and one that must be decomposed to be understood.(56) Roughly $35 to $40 billion of it is the direct military and operational cost already counted in Section 5.2. The remaining $92 to $97 billion is the consumer pass-through of the energy shock — higher prices at the pump and in the shops as Brent crude spiked from about $71 to a peak of $138.21 and US gasoline rose by more than $1.50 a gallon.

But much of that consumer cost is not a net national loss; it is a transfer. As oil prices surged, US energy producers reaped windfall profits exceeding $40 billion — a transfer from American consumers to American produce-

(54) Congressional Research Service, U.S. Conflict with Iran, CRS Report R48887 (2026).
(55) U.S. Department of Defense, Defense Casualty Analysis System, Operation Epic Fury (June 2026).

rs that, within the national account, largely washes out. Netting the windfall against the consumer burden leaves a true US welfare loss from the energy shock of roughly $55 to $60 billion, consistent with the Dallas Fed's –0.26-point GDP estimate. Figure V.2 sets out the decomposition.

**FIG V.2 Decomposing the Moody's $132B**

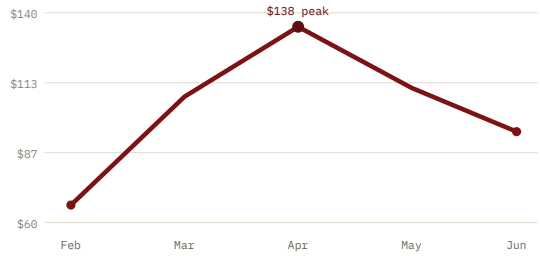



The gross $132B nets to ~$58B of real US welfare loss once the domestic producer windfall is removed. Source: Moody's; AHRC computation.

The financial-market shock was sharper but entirely transient. The S&P 500 fell 7.8 percent from its pre-war level over the thirty days following the opening strike, then recovered completely within 44 days as markets concluded that the Strait of Hormuz disruption would not tip the world into depression.(57) Because a six-week dip in equity valuations does not durably alter consumption, this study records the market shock as a frictional rather than a real cost — visible and disruptive, but not a permanent destruction of output. The same logic applies to the gold, Treasury, and currency moves: dramatic in the moment, immaterial to the medium-term ledger.

For households, however, the energy shock was anything but immaterial while it lasted. Brown University's Costs of War project, comparing actual pump prices against a no-war counterfactual, calculated that American consumers paid more than $40 billion in extra fuel costs between late February and mid-May — an unlegislated, economy-wide "war tax" of over $300 per household.(58) That this burden was partly offset, in the national aggregate, by domestic producer windfalls is cold comfort to the drivers who paid it; the distributional reality — a regressive transfer from consumers to the energy sector — is a political fact even where it nets out as an economic one. Figure V.3 traces the price path that produced it.

**FIG V.3 Brent crude, 2026 ($/barrel)**




From ~$71 pre-war to a $138.21 peak on 7 April, easing to ~$98 by mid-year. Source: Senate EPW; EIA.

The macroeconomic verdict, then, is benign. A war that closed the world's most important oil chokepoint and tripled the price of crude cost the United States barely a quarter-point of GDP, because the country now produces more oil than it consumes and uses far less of it per dollar of output than it once did. American consumers felt the shock at the pump, American producers reaped a windfall, and the two largely offset. Had the accounting stopped here — at the campaign, the transfers, and the modest macroeconomic drag — the cost to the United States would be a contained and almost unremarkable figure. It does not stop here, and the reason is the subject of the section that follows.

## 5.6 The fiscal tail and the dual total

Everything to this point yields a contained figure: about $123 billion to the end of 2026, closely matching the Moody's headline once transfers and front-loaded costs are summed. Were the accounting to stop there — as conventional cash-based budgeting does — the United States would appear to have fought a major war for the price of a fortnight's federal spending. But the commissioner's instruction, and the Stiglitz–Bilmes methodology that informs this study, require the multi-decade liabilities to be brought into present value, and it is there that the American cost becomes genuinely large.

Three long tails dominate. The first is veterans' care. The conservative reading scales only from the 413 wounded in action, yielding a future Department of Veterans Affairs liability of $0.6 to $1.0 billion. The Stiglitz–Bilmes reading is far larger: with more than 50,000 personnel deployed to a theatre marked by toxic exposure from burning petrochemical plants and traumatic brain injury from ballistic impacts, and applying the 37-percent disa-

(56) Moody's Analytics, "The Iran Oil Shock" economic assessment (2026); see also Brown University Costs of War Project, "Iran War Energy Cost Comparisons" (2026).
(57) Equity-market data; the index round-tripped from 6,878 to 6,343 and back to 6,886 by mid-April.
(58) Brown University Costs of War Project, "Iran War Energy Cost Comparisons" (Providence, RI: Watson Institute, 2026).

bility-claim rate observed after the 1990 Gulf War, more than 16,000 personnel may ultimately require lifetime care — a liability the framework places, when fully extended, in the high hundreds of billions.(59) The second tail is the interest on the war debt: financed entirely by borrowing at rates above 4 percent, the $87.6 billion supplemental will cost an estimated $10.9 to $30.8 billion in interest over the next decade alone. The third is the permanent ratchet in the base defence budget, which history suggests is rarely reversed once war elevates it.

These tails do not arrive in a vacuum. The United States already owes an estimated $7.3 trillion in future disability and health benefits from its post-9/11 wars; the 2026 obligations layer onto that existing mountain, falling due precisely as the costs of the earlier conflicts peak.(60) Nor is the supplemental's fate yet settled: as of late June the $87.6 billion request remained entangled in Congress over unrelated domestic riders, leaving the precise enacted figure — and thus the precise interest cost — unresolved. The study records the request as the liability, pending enactment, and notes that the political friction itself is a small, recurring cost of war-by-supplemental. Table V.4 sets out the three tails under both readings, and makes plain that the entire gap between $200 billion and $1.1 trillion lives, in essence, in a single line: veterans' care.

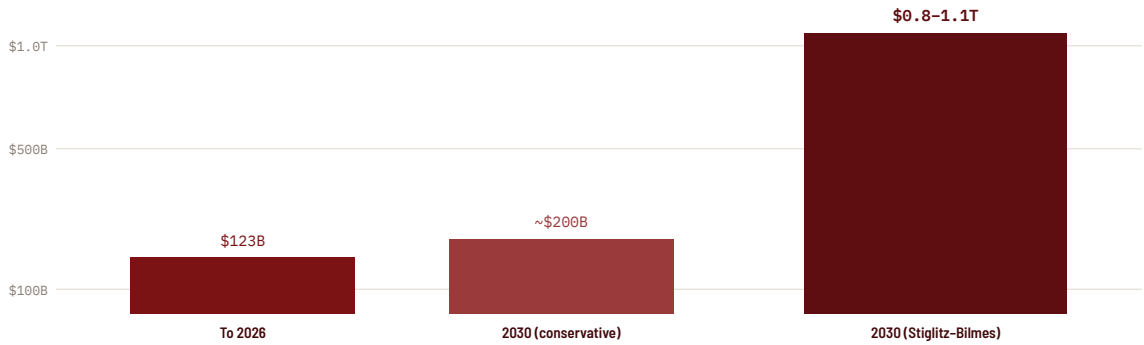
**TABLE V.4 — UNITED STATES: THE LONG FISCAL TAIL, PRESENT-VALUED**

| Tail | Conservative ($B) | Stiglitz–Bilmes ($B) | Basis |
|---|---|---|---|
| **Veterans' care (VA)** | 0.6–1.0 | 600–1,000 | 413 wounded ↔ 16,000+ claimants |
| **War-debt interest (10-yr)** | 11–31 | 31 | CBO rates on $87.6B |
| **Base-budget ratchet** | 20–40 | 100+ | permanent spending step-up |
| **Long-tail subtotal** | **~70** | **~700–1,100** | |

*The veteran line drives the entire divergence. Source: AHRC computation on Stiglitz–Bilmes; CBO; Costs of War.*

Figure V.4 presents the consequence: not one total but two, separated by a methodological choice the reader can see and weigh.

**FIG V.4 The US total — conservative versus Stiglitz–Bilmes**




The gap between the two 2030 figures is almost entirely the veteran-care tail. Source: AHRC computation on CSIS, Moody's, and Stiglitz–Bilmes.

On the conservative reading, scaling the long tails from documented casualties, the United States' medium-term cost reaches roughly $200 billion by 2030 — a sum dominated by the military campaign, the energy welfare loss, the transfers, and a modest, casualty-based veteran liability. On the full Stiglitz-Bilmes reading, in which the veteran tail is projected from the deployed force and the base-budget ratchet is counted, the figure climbs toward $0.8 to $1.1 trillion. The honest position, and the one this study adopts, is that both are defensible and the truth depends on assumptions about the future that cannot yet be tested. The Monte-Carlo band — a tenth percentile near $150 billion and a ninetieth near $1 trillion — is therefore not a measurement error but a genuine

(59) Linda J. Bilmes, "How Much Will the Iran War Cost?" (Harvard Kennedy School, 2026); Stiglitz-Bilmes methodology, after The Three Trillion Dollar War.
(60) Linda J. Bilmes, Harvard Kennedy School, on accumulated veteran liabilities; Costs of War Project.

fork in the methodology, and the reader is owed both prongs.

It is worth dwelling on why the American case inverts Iran's so completely. Iran's cost was immediate, visible, and concentrated in destroyed capital and lost output; America's is deferred, invisible on any current balance sheet, and concentrated in obligations that fall due over fifty years. Iran lost the war and paid at once; the United States won it and will pay slowly. The figures also reconcile cleanly with the public record — the $123 billion short-term total sits essentially atop the Moody's $132 billion, the $40 billion military cost within the CSIS range, and the GDP drag at the Dallas Fed's –0.26 points — which lends confidence to the construction even as the long-tail figure remains, by its nature, an estimate of a future not yet arrived.

There is a final irony worth stating. The United States will likely never perceive this war as expensive. Its cost did not arrive as a visible bill, a spike in unemployment, or a collapse in output; it arrived, and will continue to arrive, as a slow accretion of obligations spread so thinly across decades and budget lines that no single year registers the burden. This is precisely why the Stiglitz–Bilmes method exists: to make visible the costs that cash accounting hides. Whether the American figure is ultimately nearer $200 billion or $1 trillion will be settled not on any battlefield but in the actuarial tables of the Department of Veterans Affairs, over the next half-century — which is to say that the true cost of America's shortest major war will be among the last of its costs to be known.

**THE BOTTOM LINE — UNITED STATES**

The economic cost to the United States is roughly $123 billion to end-2026, and by 2030 either about $200 billion on a conservative reading or $0.8 to $1.1 trillion once the full Stiglitz–Bilmes veteran-care, interest, and base-budget tails are present-valued. The macroeconomic blow was slight — net-exporter status absorbed the oil shock at a cost of just 0.26 points of GDP — but the fiscal tail is vast. In raw human terms, mercifully few: 13 dead and 413 wounded. America fought a small war and will pay a long bill.

PART SIX

# The World Economy

PART VI · WORLD ECONOMY

# The bystanders' bill

The largest economic cost of the 2026 war was borne by no party to it. By closing the Strait of Hormuz for some 110 days, Iran inflicted on the global economy what the International Energy Agency called the largest oil-supply disruption in the history of the oil market — and the bill for that disruption fell overwhelmingly on the oil-importing economies of Europe, Asia, and the developing world, none of which had fired a shot. This chapter estimates that global cost at roughly $0.82 trillion to the end of 2026 and $1.4 trillion by 2030: larger, on a deadweight basis, than the combined national totals of Iran, Israel, and the United States. But arriving at that figure requires more methodological discipline than any other in this study, because the world account is the one place where the most seductive error in war-cost accounting must be ruthlessly excluded.

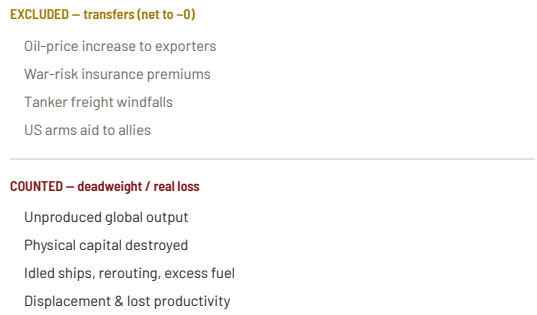
That error is the conflation of a transfer with a cost. When the price of oil triples, vast sums change hands — but globally, what one party loses another gains, and the net destruction of world wealth is far smaller than the gross flows suggest. This chapter therefore opens with the accounting principle that governs it, then applies that principle in turn to the global output loss, the energy channel, the maritime disruption, and the contagion into third-party economies, before consolidating a world total that is deliberately, and instructively, not the sum of the national chapters that precede it.

## 6.1 Transfers versus deadweight

The distinction on which this chapter rests is simple to state and easy to forget. A transfer is a zero-sum reallocation of purchasing power: when Brent crude rises from $72 to $138, oil importers pay more and oil exporters receive more, and the two cancel at the level of the world as a whole. A deadweight loss, by contrast, is the genuine destruction of wealth that no one recaptures — the capital reduced to rubble, the life ended, the cargo that sat idle, the output that was never produced because a factory went dark for want of energy. Only deadweight losses belong in the world total.

This is not a pedantic refinement; it is the difference between a credible figure and a wildly inflated one. The gross financial flows triggered by the oil spike alone ran into the hundreds of billions of dollars, and the war-risk insurance premiums and freight-rate surges added hundreds of billions more. Summed naively, these would suggest a global cost of several trillion. But the oil-price increase was a windfall to Saudi Arabia, Russia, and every other exporter outside the conflict zone exactly as much as it was a burden to importers; the insurance premiums enriched underwriters as much as they cost shippers; the freight surcharges flowed to shipowners. Strip out these transfers, as the methodology in Part I requires, and what remains is the true global cost — substantial, but a fraction of the gross. Figure VI.1 illustrates the principle.

**FIG VI.1** What counts at the world level




Only real-resource and deadweight losses enter the world total; pure transfers are stripped out.
Source: AHRC framework, Part I §1.3.

One consequence of this discipline deserves emphasis up front, because it surprises readers who expect the parts to sum to the whole. The national chapters include transfers — US aid is a cost to America, the oil-price rise a cost to importing combatants — whereas the world account excludes them. The world account also includes the losses of dozens of bystander economies that have no national chapter here at all. For both reasons, the world figure of $1.4 trillion is not the sum of Iran's $305 billion, Israel's $135 billion, and America's $200 billion; it is a separately constructed measure of the real global cost, and Section 6.6 reconciles the two perspectives explicitly.

## 6.2 The global output loss

The dominant deadweight cost is the world output that the war prevented from being produced. Unproduced goods and services cannot be transferred to anyone; they are simply gone, and downward revisions to global GDP measure them directly. The institutions converged

on the direction if not the precise magnitude. The IMF cut its 2026 global growth forecast from 3.3 to 3.1 percent — a 0.2-point drag — in its April World Economic Outlook;[61] the World Bank, capturing data deeper into the conflict, cut its June Global Economic Prospects forecast from 2.9 to 2.5 percent, the lowest global growth since the COVID-19 pandemic.[62] J.P. Morgan estimated a 0.6-percent annualised drag on first-half global output.

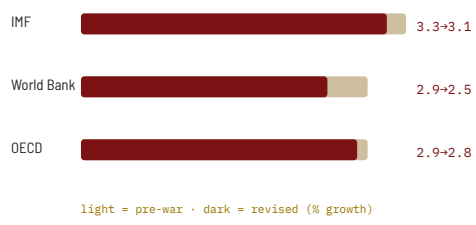
Translating these revisions into a dollar figure requires care, and the estimates span a wide range. A naive application of the World Bank's 0.4-point cut to a roughly $115 trillion world economy yields about $460 billion for 2026; the Dallas Fed's modelling, which put the rest-of-world hit at 1.73 points against the United States' 0.26, implies something closer to $1.5 trillion; and the Institute for Economics and Peace, monetising on a purchasing-power basis, placed the global loss at $2.2 trillion, rising to $3.5 trillion if the war resumed.[63] This study adopts a central path that begins at roughly $600 billion in 2026 and tapers as the global economy recovers, with persistent scarring through 2030, for a present value of about $1.2 trillion — conservative relative to the IEP figure, and anchored on the realised institutional revisions. Table VI.1 records the path; Figure VI.2 sets the institutional revisions side by side.

**TABLE VI.1 — GLOBAL OUTPUT LOSS, PRESENT-VALUED (CONSTANT-2026 USD)**

| Metric | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|
| Output loss ($B) | 600 | 300 | 180 | 90 | 45 |
| Present value ($B) | 600 | 298 | 177 | 88 | 44 |
| **PV to 2030** | | | | | **1,207** |

*Central path between the World Bank's realised revision and the IEP/Dallas-Fed estimates. Source: AHRC computation.*

**FIG VI.2 2026 global growth: pre-war vs revised**




Every major institution cut its 2026 global forecast. Source: IMF, World Bank, OECD.

The output loss does not end with the fighting. The World Bank's projections show global growth rebounding only to 2.8 percent in 2027 — still half a point below the average of the 2010s — and warn of persistent scarring through 2030, as the energy shock and the debt-servicing burdens it created stall the developing world's progress toward income convergence. For emerging economies excluding China and India, the institution projects nearly a decade of zero progress in narrowing the per-capita income gap with advanced nations. The $1.2 trillion present value in Table VI.1 therefore captures not a single bad year but a flattened trajectory — output forgone slowly, across many economies, for years after the guns fall silent.

## 6.3 The oil and energy channel

The mechanism through which a regional war became a global one was the price of oil. On the eve of the conflict Brent crude traded near $72 a barrel; Iran's closure of the Strait of Hormuz, through which some 20 million barrels a day and a fifth of the world's liquefied natural gas normally pass, drove it to a peak between $126 and $138 before it round-tripped, by late June, back to roughly its starting level as the Islamabad Memorandum reopened the waterway.[64] Over the 110-day disruption, an estimated 140 million barrels of crude and product were halted, against alternative pipeline capacity of only a few million barrels a day.

Here the transfer-deadweight distinction does its most important work. The fact that Brent round-tripped is the clearest possible evidence that the price spike itself was a transfer, not a permanent loss: the oil was still there, the price returned, and the hundreds of billions that changed hands during the spike moved from importers to exporters and, in part, back again. What the price

(61) International Monetary Fund, "War Darkens Global Economic Outlook and Reshapes Policy Priorities" (April 2026).
(62) World Bank, Global Economic Prospects (June 2026): "Middle East Conflict Sends Global Growth to Lowest Rate Since COVID-19."
(63) Institute for Economics and Peace, Global Peace Index 2026; "Cost of Peace: Global Economy Missing Out on $2.2 Trillion Due to US–Iran War," via Vision of Humanity (2026).
(64) Brent peak figures vary by benchmark and date: ~$126–128 on market data, $138.21 per the Senate EPW citation of 7 April. The round-trip to ~$72 by late June is well documented.

spike did leave behind, however, was real and irreversible — the output destroyed when energy-intensive industries throttled back, the demand permanently lost to higher prices, the investment deferred under uncertainty. The standard tool for sizing this residue is the oil-price elasticity of GDP, and the IMF's rule of thumb — that a sustained 10-percent rise in oil prices reduces global output by 0.1 to 0.2 percent — is the anchor this study uses, cross-checked against the structural elasticities of the IIF and the central banks.(65) The deadweight residue of the energy shock, so measured, is already embedded in the global output loss of Section 6.2 rather than added separately, to avoid double counting.

Oil was not the only energy casualty. The Strait of Hormuz also carries roughly a fifth of the world's seaborne liquefied natural gas, almost all of it Qatari, and with no pipeline alternative QatarEnergy was forced to declare force majeure on its exports. The shock propagated instantly into the European and Asian gas markets that had leaned on Qatari supply as a substitute for Russian pipeline gas: European benchmark prices, which had hovered near €30 a megawatt-hour, spiked above €60. As with oil, much of this price movement was a transfer — but the industrial output lost when energy-intensive European manufacturers throttled back was deadweight, and it is part of why Germany absorbed a sharper GDP revision than the euro area as a whole.

## 6.4 Shipping, insurance, and trade

The maritime sector offers the cleanest illustration of the whole chapter's logic, because its costs divide so neatly into the two categories. On the transfer side, war-risk insurance premiums for Hormuz transits leapt from about 0.125 percent of hull value to between 1.5 and 3 percent — and above 10 percent at the March peak — while very large crude carrier freight rates on the Gulf-to-China route surged from roughly $100,000 a day to over $420,000.(66) These were enormous sums, but they flowed to insurance syndicates and shipowners; they redistributed wealth without destroying it, and so are excluded from the world total.

On the deadweight side lies the genuine loss. At the peak of the crisis the International Maritime Organization reported some 2,000 commercial ships and 20,000 mariners stranded in the Gulf, billions of dollars of productive capital sitting idle. Vessels that could move were forced to reroute around the Cape of Good Hope, adding ten to fourteen days to each voyage and burning millions of dollars in additional fuel; a single major container line reported absorbing $40 to $50 million a week in extra costs.(67) The idled capital, the wasted bunker fuel, the human time lost to longer voyages — these are real resources consumed and not recovered, and the study carries roughly $40 billion of such maritime deadweight in the world total. Table VI.2 separates the two.

TABLE VI.2 — MARITIME DISRUPTION: TRANSFERS VERSUS DEADWEIGHT

| Item | Magnitude | Classification |
|---|---|---|
| **War-risk insurance premiums** | 0.125% → 1.5–3% of hull | Transfer |
| **VLCC freight rates** | $100k → $424k / day | Transfer |
| **Stranded ships & mariners** | ~2,000 ships, 20,000 crew | Deadweight |
| **Cape rerouting** | +10–14 days, excess fuel | Deadweight |
| **Operator friction** | $40–50M / week (per line) | Deadweight |

Beyond the tankers, the disruption rippled through global container shipping and the food trade. Major lines suspended Hormuz transits, absorbing a share of global container capacity into longer routings around Africa, even as Houthi attacks simultaneously constricted the Red Sea and Suez. The Gulf states, which import the overwhelming majority of their food by sea, faced an acute supply emergency, airlifting staples at exorbitant cost. And the region's role as a supplier of fertiliser feedstock — a large share of the world's sulphur and urea — meant the disruption reached into global agriculture, a slow-acting channel whose full cost will appear in next season's harvests rather than in this year's accounts.

## 6.5 Contagion to third parties

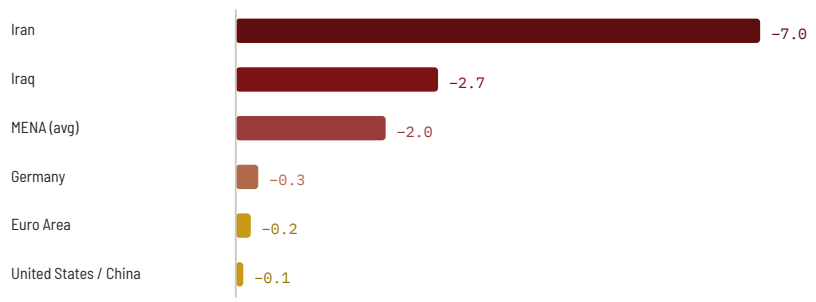
The war's deadweight reached far beyond the combatants, into economies that were neither party to the fighting nor compensated for its consequences. Iraq, dependent on Gulf maritime routes for its sovereign revenue, saw oil output collapse by 70 percent — from 3.3 to

(65) International Monetary Fund guidance, 2026; IIF and IMF MULTIMOD elasticities of −0.010 to −0.015.
(66) War-risk and freight data via Lloyd's List, Caixin, and IndexBox; House of Saud, "How Insurance Markets Closed the Strait of Hormuz" (2026).
(67) International Maritime Organization via the 2026 Strait of Hormuz crisis reporting; Hapag-Lloyd operating-cost disclosures.

1.3 million barrels a day — and its 2026 growth forecast cut by 2.7 points.(68) Lebanon, already in profound crisis, suffered widespread physical devastation as the conflict spread across its south. In the Gulf, Saudi Arabia's Ras Tanura refinery — the kingdom's largest — was damaged and forced offline, and the World Bank reported near-zero growth across the Gulf economies for 2026.

The human contagion was vast. Beyond Iran's 3.2 million internally displaced, the International Organization for Migration recorded over a million displaced in Lebanon and another million in Iraq — more than five million working-age adults and dependents, in all, wrenched from productive life, a deadweight loss of output and human welfare that no balance sheet fully captures.(69) And the financial contagion was global: the war-driven repricing of risk pushed the US ten-year Treasury yield up by 0.36 points and the thirty-year mortgage rate by 0.38, tightening financial conditions and suppressing investment worldwide, while the European Central Bank warned that a prolonged conflict could push Germany and Italy into recession. Figure VI.3 maps the asymmetry of the cross-country blow.

**FIG VI.3 2026 GDP-growth revision, by economy (percentage points)**




The damage falls in inverse proportion to distance from the conflict — and to oil-import dependence. Source: IMF WEO; peer-reviewed cross-country modelling.

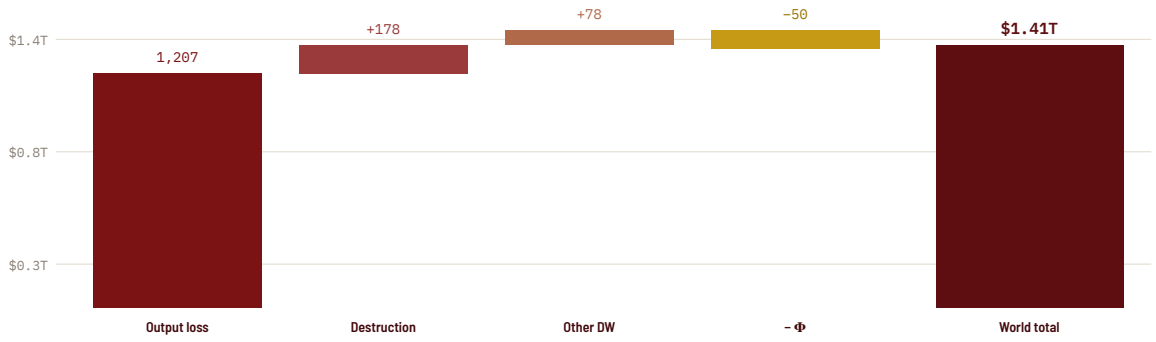
The contagion's reach is best seen in two specific cases. Egypt, whose Suez Canal is a pillar of state revenue, saw canal income fall by some 60 percent as shipping rerouted around the Cape, even as six billion dollars of foreign portfolio investment fled its markets within weeks — a balance-of-payments blow to a country with no stake in the war. Sri Lanka, already fragile, was pushed toward a renewed sovereign-debt crisis, its projected debt-to-GDP ratio climbing toward levels at which IMF programmes become unworkable. These are not abstractions buried in a global aggregate; they are specific nations driven toward crisis by a conflict in a strait thousands of miles away, and they are the human face of the bystanders' bill.

## 6.6 The world total

Consolidating the deadweight components yields the world figure. The global output loss of $1.2 trillion in present value is joined by the physical capital destroyed across all theatres — Iran's $130 billion, Israel's $6 billion, US hardware, and some $40 billion of contagion-zone destruction in Lebanon, Iraq, and the Gulf — together with the maritime deadweight, the displacement losses, and the value of lives lost across every party, less an overlap correction to avoid counting destroyed capital twice. The result is about $0.82 trillion to the end of 2026 and $1.41 trillion by 2030. Figure VI.4 assembles it.

(68) Cross-country revisions per IMF WEO and the peer-reviewed cross-country analysis of the 2026 shock.
(69) International Organization for Migration and UNHCR situation reports, March–May 2026.

**FIG VI.4** Building the world total (to 2030, deadweight basis)




Output loss dominates; transfers are excluded throughout. Band: $0.6T (P10) to $3.5T (P90, war resumes). Source: AHRC computation.

Why does this exceed the combined national totals? The arithmetic is worth seeing plainly. The three combatant chapters sum to roughly $640 billion — Iran's $305 billion, Israel's $135 billion, and America's $200 billion — yet the world figure is more than twice that. The gap is not an error; it is the whole point. The combatant totals include transfers that vanish at the world level, but they exclude the output losses of Europe, Japan, Korea, China, India, and the entire developing world, none of which appears in this report's national chapters and all of which paid a real price for a war they did not fight. The world account captures those bystander losses and the regional contagion into Iraq, Lebanon, and the Gulf, while stripping out the transfers — and the net effect is a figure substantially larger than the sum of the belligerents' own bills.

There is a deep inequity encoded in that figure, and it is the moral centre of this chapter. The Dallas Fed's modelling found that the United States — a principal in the war — absorbed a GDP hit of just 0.26 points, while the rest of the world bore 1.73, roughly six times as much. The economies least responsible for the conflict, and least able to defend themselves against its consequences, paid the most: Sri Lanka pushed toward sovereign default, Egypt's Suez Canal revenues halved as shipping rerouted and six billion dollars of foreign investment fled, and energy-importing developing nations across Asia and Africa saw a decade's progress toward income convergence stall. The $1.4 trillion is, in this sense, a regressive tax levied by a war in the Gulf on the poor of the world.

It is worth situating the figure historically. In volume terms, the Hormuz closure removed more than twice as much oil from the market as the 1973 embargo, and the International Energy Agency judged it the largest supply disruption in the history of the oil market. That the deep global recession of the 1970s did not recur is itself a measure of how much less oil-intensive the world economy has become — the same structural shift that insulated the United States. But the $1.4 trillion central cost, and the $3.5 trillion that a resumption would bring, would still rank the 2026 war among the most economically destructive conflicts of the century, rivalling the first-year global toll of the Russia–Ukraine war despite lasting a fraction as long.

The figure reconciles with the only comparable published estimate — the Institute for Economics and Peace's $2.2 trillion baseline — which sits above this study's $1.4 trillion central because it is built on a purchasing-power basis and a broader definition of violence's cost; the convergence of order of magnitude, from independent methods, is reassuring. The uncertainty is nonetheless large: the tenth-to-ninetieth-percentile band runs from about $0.6 trillion, if the disruption proves shorter and shallower than modelled, to $3.5 trillion, the IEP's estimate should the war resume and the strait close again. That upper figure would exceed the first-year global cost of the Russia–Ukraine war — a reminder that the $1.4 trillion central estimate already embeds an assumption that the fragile peace holds.

**THE BOTTOM LINE — THE WORLD**

The deadweight cost to the world economy reaches roughly $0.82 trillion to end-2026 and $1.4 trillion by 2030 — larger than the combined national totals of all three combatants, and rising toward $3.5 trillion should the war resume. It is dominated by unproduced global output, not by the oil-price spike, which round-tripped and nets to zero. And it falls with brutal asymmetry on the bystanders: the rest of the world absorbed roughly six times the GDP hit borne by the United States. The largest bill of the 2026 war was paid by those who had no part in it.

PART SEVEN

# Synthesis

PART VII · SYNTHESIS

# The war in one ledger

Five chapters of construction can now be drawn together. This synthesis consolidates the four economies into a single ledger, resolves the apparent paradox of figures that do not sum, sets out the scenario range and the parameters that move it, distils the study's five central findings, and states plainly what the estimate cannot capture. The headline numbers have appeared throughout; the purpose here is to see them whole, and to be honest about what they do and do not mean.

## 7.1 The consolidated ledger

Table VII.1 brings the four entity estimates into one place, in constant-2026 dollars, present-valued to the war's onset and probability-weighted across the three scenarios. The structure of the war's cost is visible at a glance: Iran's loss dwarfs the others in proportion to its economy; the United States carries a uniquely wide range, the legacy of its deferred fiscal tail; and the world figure stands apart, larger than the combatants combined.

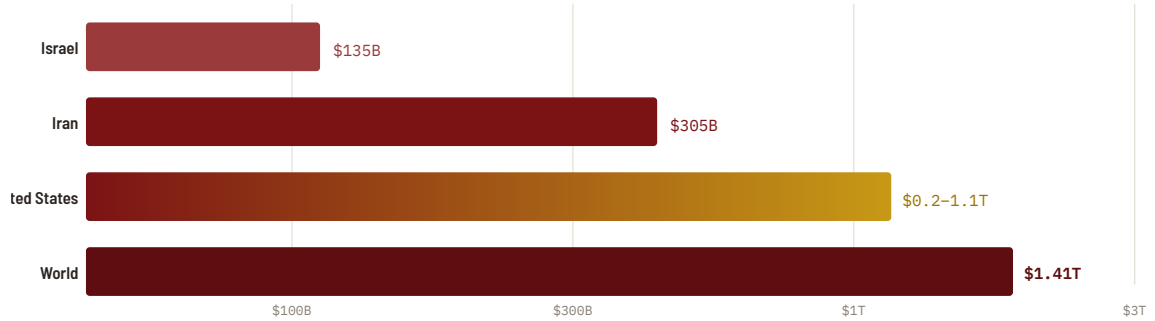
TABLE VII.1 — CONSOLIDATED COST OF THE 2026 WAR (CONSTANT-2026 USD, P50)

| Economy | To 2026 | To 2030 | P10–P90 (2030) | Note |
|---|---|---|---|---|
| Iran | $187B | $305B | $210–480B | ~81% of GDP; PPP ~$720B |
| Israel | $59B | $135B | $95–200B | ~25% of one year's GDP |
| United States | $123B | $200B–1.1T | $150B–1.0T | conservative ↔ Stiglitz-Bilmes |
| **World (deadweight)** | **$0.82T** | **$1.41T** | **$0.6–3.5T** | **not the sum of the above** |

*Entity sum (Iran + Israel + US), 2030 ≈ $640B, and includes transfers; the world figure excludes transfers and adds bystander losses. Source: AHRC computation, Parts III–VI.*

Figure VII.1 renders the same comparison visually, on a logarithmic scale to accommodate the three orders of magnitude the war's costs span — from Israel's tens of billions to the world's trillions.

FIG VII.1 Medium-term cost by economy, to 2030 (log scale)




Logarithmic scale. The US bar spans its conservative-to-Stiglitz–Bilmes range; the World bar is deadweight and not the sum of the others. Source: AHRC computation.

## 7.2 Three numbers, three lenses

Pressed for a single "cost of the war," this study declines — not from evasion, but because three different and equally legitimate numbers answer three different questions, and collapsing them into one would mislead. The first lens is the combatant cost: the sum of what Iran, Israel, and the United States each lost, roughly $640 billion by 2030. The second is the global deadweight: the true net destruction of world wealth, about $1.4 trillion,

anity as a whole. The third is the maximal figure: under re-escalation, or under the full Stiglitz–Bilmes accounting of America's tail, the cost climbs toward $2 to $3.5 trillion.

Each is correct within its frame. A finance minister tallying national damage wants the first; an economist measuring the war's drag on global welfare wants the second; a strategist weighing worst cases wants the third. The error would be to quote any one as "the" cost without naming its lens. This report's preferred single figure, where one is unavoidable, is the global deadweight of $1.4 trillion — because it alone counts every real loss once and no transfer at all.

## 7.3 Scenarios and sensitivity

Every figure in this study is a probability-weighted average across three futures, and the spread between them is wide. Table VII.2 sets out the 2030 cost to each economy under a holding ceasefire, a protracted standoff, and a re-escalation.

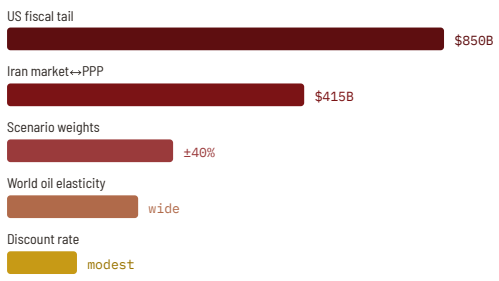
TABLE VII.2 — 2030 COST BY SCENARIO (CONSTANT-2026 USD)

| Economy | Ceasefire (0.40) | Protracted (0.35) | Re-escalation (0.25) | Expected |
|---|---|---|---|---|
| Iran | $250B | $320B | $400B | $305B |
| Israel | $95B | $150B | $215B | $135B |
| United States | $165B | $205B | $270B | $200B |
| World | $0.85T | $1.5T | $2.6T | $1.41T |

*US figures on the conservative-tail basis. Source: AHRC computation.*

Beneath the scenarios lie a handful of parameters that move the headline more than any data revision could, and intellectual honesty requires naming them. Figure VII.2 ranks them. The single largest is the treatment of America's fiscal tail, which alone swings the US total by some $850 billion. The second is the choice between market-exchange-rate and purchasing-power valuation for Iran, worth roughly $415 billion. The discount rate, the scenario weights, and the oil-price elasticity follow. A reader who disagrees with this study's choices on these few parameters can, in effect, reprice the entire war.

FIG VII.2 What moves the headline — sensitivity




Approximate swing in the relevant total from each parameter choice. Source: AHRC computation.

## 7.4 Five findings

**1** The burden was profoundly asymmetric. Iran bore an existential cost — roughly four-fifths of pre-war GDP; Israel a manageable one of about a quarter of a year's output; the United States a small macroeconomic but large fiscal-tail cost; and the world the largest absolute loss of all, borne mostly by bystanders.

**2** The oil-price spike was a transfer, not the cost. Brent round-tripped from $72 to a peak near $130 and back; the real global cost is the $1.2 trillion of unproduced output it left behind, not the price movement itself. Excluding transfers cuts the naive figure by hundreds of billions.

**3** The American figure is, transparently, a methodological artifact. At a 3-percent discount with conservative tails the United States cost is about $130 billion; under Stiglitz–Bilmes with the long tails folded in, it approaches a trillion. Same war, eightfold range — driven by two defensible but consequential choices.

**4** The parts do not sum to the whole, by design. The world account excludes the transfers that inflate the national ledgers and includes the bystander losses they omit; its divergence from the entity sum is a feature of correct accounting, not an error.

**5** Recovery capacity, not the size of the initial blow, set the medium-term cost. Israel and the United States absorbed sharp but transient shocks because they could borrow, recapitalise, and demobilise; Iran could do none of these, and so its output gap — and its cost — persist to the end of the decade.

## 7.5 Limitations

This study deliberately omits several costs that resist credible monetisation and would, in every case, push the figures higher rather than lower: the proliferation consequences of the damage to Iran's nuclear programme; the erosion of state and institutional capacity that decapitating strikes inflict; the strategic cost to the United States of a hollowed munitions stockpile; and the human suffering that exceeds any dollar value placed on it. The casualty and damage data, gathered months after an active war, remain uncertain and in places contested, and are entered as distributions rather than points. The forward figures to 2030 are scenario-conditional projections, not forecasts of a known future. And the entire estimate is economic: it makes no claim about the war's strategic wisdom, its legality, or its justice. What it offers is a disciplined, transparent, and sourced account of the war's price — in dollars, by whom it was paid, and across what span of years — and an insistence throughout that the reader be shown the assumptions behind every number.

**THE BOTTOM LINE — SYNTHESIS**

By the end of 2030 the 2026 war will have cost its three combatants some $640 billion between them, and the world economy about $1.4 trillion in real, deadweight terms — with a credible range from $0.6 trillion to more than $3.5 trillion depending on whether the peace holds and how America's fiscal tail is reckoned. The cost fell most heavily on Iran, which lost the war, and on the world's bystanders, who had no part in it. That is the arithmetic of the 2026 war; the chapters above are the evidence for it.

APPENDIX

# Parameter Register & Data Confidence

# Appendix · Parameter Register

Every parameter that enters the model is listed here with its value, its source, and an explicit confidence rating — High, Medium, or Low. Where a figure is modelled rather than observed, it is marked as such. The intent is that a sceptical reader can reconstruct any number in the report, test it against its source, and substitute a preferred value of their own. Confidence is rated H for primary-institutional data, M for triangulated or single-reputable-source figures, and L for modelled or contested values.

## A.1 Shared parameters

TABLE A.1 — PARAMETERS COMMON TO ALL FOUR ECONOMIES

| Parameter | Central | Range | Source | Conf. |
|---|---|---|---|---|
| Onset ($t_0$) | 28 Feb 2026 | — | given | H |
| Real discount rate r | 0.75% | 0–1.5% | Stiglitz-Bilmes | H |
| VSL (US base) | $12.5M | $9.6–14.4M | US DOT / EPA | H |
| Income elasticity of VSL ($\eta$) | 1.0 | 1.0–1.2 | OECD; Viscusi-Masterman | H |
| Scenario weights (CH/PR/RE) | 0.40/0.35/0.25 | elicited | expert elicitation | L |
| Oil-price elasticity of world GDP | −0.1 to −0.2% | per +10% sustained | IMF rule of thumb | M |
| Horizons | 2026 · 2030 | — | given | H |

## A.2 Economy parameter register

TABLE A.2 — IRAN

| Parameter | Value | Source | Conf. |
|---|---|---|---|
| Pre-war nominal GDP (2025) | $376B | IMF (official rate) | M |
| Counterfactual growth | +1.0%/yr | IMF / FDD | H |
| 2026 actual growth | −6.1% | IMF WEO Apr 2026 | H |
| PPP GDP / multiplier | $1.6T / 4.26× | IMF / WB | M |
| Physical capital destroyed ($D^2$) | $130B | AHRC (FDD floor $91B) | M |
| Deaths / injuries | 5,000 / 20,000 | HRANA; intel range | M |
| VSL (market / PPP) | $0.5M / $2.4M | scaled | M |
| Output gap PV (2030) | $134.5B | AHRC computation | M |
| Oil exports (pre / war) | 2.1 → 0 mb/d | OPEC / EIA / FDD | M |
| **Total (2026 / 2030)** | **$187B / $305B** | **AHRC** | |

### TABLE A.3 — ISRAEL

| Parameter | Value | Source | Conf. |
|---|---|---|---|
| Pre-war nominal GDP (2026) | $540B | IMF / BoI | H |
| Counterfactual growth | +4.5% | BoI 3.8% / MoF 5.2% | H |
| Direct military ($D^1$) | $16B | MoF (≈50bn NIS) | H |
| Physical capital ($D^2$) | $6B | Israel Tax Authority | M |
| Deaths / injuries | 69 / 9,161 | aggregated trackers | M |
| VSL | $7.0M | scaled | M |
| Reservists mobilised | ~100,000 | MoF | H |
| Output gap PV (2030) | $78.9B | AHRC computation | M |
| **Total (2026 / 2030)** | **$59B / $135B** | **AHRC** | |

### TABLE A.4 — UNITED STATES

| Parameter | Value | Source | Conf. |
|---|---|---|---|
| Pre-war nominal GDP (2026) | $32.27T | CBO / IMF | H |
| War-attributable GDP drag | −0.26pp | Dallas Fed WP2615 | H |
| Direct military ($D^1$) | $40B | CSIS ($34–42B) | H |
| Transfers / arms aid ($D^5$) | $23B | CRS R48887 | H |
| Deaths / wounded | 13 / 413 | DCAS | H |
| Consumer-energy welfare loss | ~$58B (net) | Moody's; AHRC | M |
| Veteran tail (cons. / S-B) | $1B / $600B–1T | Stiglitz-Bilmes | L |
| **Total (2026 / 2030)** | **$123B / $200B–1.1T** | **AHRC** | |

### TABLE A.5 — WORLD (DEADWEIGHT BASIS)

| Parameter | Value | Source | Conf. |
|---|---|---|---|
| 2026 global growth revision | −0.2 to −0.4pp | IMF / World Bank | H |
| Global output loss PV (2030) | $1,207B | AHRC computation | M |
| Physical destruction (all) | $178B | AHRC | M |
| Brent peak / round-trip | $126–138 → $72 | EIA / Senate EPW | M |
| Hormuz volume × duration | ~20 mb/d × 110d | EIA / IEA | H |
| Rest-of-world GDP hit | −1.73pp | Dallas Fed | H |
| Regional displaced | >5M | IOM / UNHCR | M |
| **Total (2026 / 2030)** | **$0.82T / $1.41T** | **AHRC** | |

## A.3 Confidence and data gaps

The estimate rests on inputs of uneven reliability, and candour about that unevenness is part of the method. The war spine, the institutional macroeconomic anchors (IMF, World Bank, CBO, Dallas Fed), the US military cost (CSIS), and the Israeli fiscal and military figures (Bank of Israel, Ministry of Finance, SIPRI, the Tax Authority) are of high confidence, drawn from primary institutions. The Iranian physical-capital and casualty figures, the output-gap projections, and the maritime deadweight are of medium confidence, triangulated across sources of varying independence. The lowest-confidence inputs — flagged throughout — are the modelled Iranian indirect channels (brain drain, environmental remediation, legacy health), the US veteran long-tail, and the scenario probabilities themselves, which are subjective and revisable as events unfold.

Several gaps remain open and are named so that they are not mistaken for zeros. Iran's purchasing-power GDP, exact population, and the dollar value of its nuclear-facility damage are sourced only by proxy. Israel's strategic and military damage is hidden by censorship, and the aggregate shekel value of its civilian compensation claims has not been published. The final enacted form of the US supplemental, and the severity distribution of injuries everywhere, await later data. None of these gaps, on the evidence available, would lower the central estimates; most would raise them. The figures in this report are, in that specific sense, conservative.

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