Crude Oil Import Dependence and India's Energy Vulnerability: An Empirical Study of Energy Trade, 2014–2024

Chetna Rana*, Dr. Pardeep Singh Chauhan**

* Ph.D. Scholar from Department of Economics, Kurukshetra University, 8814092062, ranachetna198@gmail.com

** Professor, Centre for Economics Studies and Planning, Jawaharlal Nehru University, New Delhi, pschauhan@mail.jnu.ac.in

HOW TO CITE:

Chetna Rana, Pardeep Singh Chauhan (2026). Crude Oil Import Dependence and India's Energy Vulnerability: An Empirical Study of Energy Trade, 2014–2024. International Journal of Special Education, 41(20s), 218-227

ABSTRACT:

India's crude-oil security issue is not just a result of high imports; rather, it is a result of growing reliance on imports as domestic crude production has decreased and transportation energy intensity has increased. Using official MoSPI indicators, this paper creates a transparent Crude Oil Energy Vulnerability Index (CO-EVI) and uses trend analysis, compound annual growth rates (CAGR), correlations, a log–log demand proxy, and a structural-period comparison to assess the financial-year evidence from 2014–15–2023–24. According to MoSPI, domestic output decreased from 37.46 MT to 29.36 MT, while imports of crude oil rose from 189.43 MT in 2014–15 to 234.26 MT in 2023–24. The net reliance on imports of crude oil increased from 83.49% to 88.86%. On a scale of 0 to 100, the equal-weight CO-EVI, which combines import reliance, high-speed diesel wholesale costs, transport energy intensity, and erosion of domestic production, rose from 8.77 to 95.33. Instead of being a causal welfare metric, the index is descriptive. Evidence suggests that, despite improvements in the economy-wide energy intensity, India's vulnerability is caused by a structural import-production imbalance, exposure to price shocks, and reliance on transportation. In order to protect macroeconomic buffers without stifling efficiency incentives, the paper suggests a multifaceted approach that includes accelerating transport electrification and efficiency, deepening supplier and route diversification, bolstering strategic stocks, and expanding domestic production only where it is both economically and environmentally feasible.

Keywords: crude oil; import dependence; energy vulnerability; India; MoSPI; energy security; transport electrification; oil-price shocks; composite index.

1. Introduction

India's susceptibility to crude oil is a production and external balancing issue. Transportation, manufacturing, and agriculture all depend on crude oil, and MoSPI claims that a significant reliance on imported crude exposes the trade balance to changes in the world's energy prices. [1] As a result, the relevant risk is multifaceted: a

nation may simultaneously face increased import quantities, decreased domestic production, increased transportation intensity, and a higher price bill.

Three questions are posed by the study. First, between FY 2014–15 and FY 2023–24, how did India's reliance on crude oil imports change? Second, was the domestic supply base able to meet the demand from imports? Third, how did the nation's vulnerability profile change as a result of observable price and transportation indicators? The pre-pandemic growth, the COVID-19 contraction in 2020–2021, the rebound that followed, and the global energy price shock in 2022–2023 are all included in this time frame. The most recent MoSPI release offers a consistent annual series from 2014–15 to 2023–24. However, it notes that final data are published later and may update prior observations, and it designates 2023–24 figures as preliminary. [2]

Four contributions are made in this work. It presents a reproducible index and data file that can be audited or expanded with monthly macroeconomic data; it integrates physical trade, domestic production, price, and transport indicators; it separates descriptive evidence from causal inference; and it employs the MoSPI supply-side definition of net energy import dependency rather than treating gross imports as vulnerability on their own. The Ministry of Petroleum and Natural Gas's crude-oil number is different from MoSPI's because MoPNG utilizes the consumption side, whilst MoSPI uses the supply side. MoSPI defines net energy import dependency as net imports divided by total supply. [3]

2. Literature and conceptual framework

The concepts of availability, affordability, accessibility, and resilience are frequently used to describe energy security. Energy security is defined by MoSPI's sustainability framework as ongoing availability in adequate amounts and at reasonable prices. Net energy imports and vital fuel reserves are identified as indicators for security monitoring. [3] Fuel-specific dependency, supply efficiency, pricing, import dependency, and strategic stockpiles are some of its economic-dimension indicators.

A transmission mechanism from external oil shocks to macroeconomic stress is supported by past empirical research from India. Ghosh and Kanjilal report the asymmetric impacts of oil price shocks on inflation and foreign exchange reserves using Toda–Yamamoto and Markov regime-switching VAR models. [4] According to a VECM analysis of India, changes in oil prices have an impact on stock prices, output, inflation, and the real exchange rate, with impulse reactions that last for several quarters. [5] According to a Reserve Bank of India research, after the government absorbs the shock, an increase in oil prices of US$10 per barrel increases inflation by about 49 basis points or the budget deficit by 43 basis points of GDP. [6]

Additionally, it is structurally challenging to rapidly compress import demand. A study conducted in India between 1970–1971 and 2005–2006 utilizing an ARDL limits technique reveals a long-term correlation between income, imported crude prices, and crude oil imports. The study also reports a long-term income elasticity of 1.97. [7] Price-inelastic import demand and a substitution link between oil imports and electricity prices are reported in recent study on reducing India's reliance on crude oil. This suggests that lower oil dependence can be supported by cheaper electricity and a cleaner power system. [8] The current methodology is motivated by these findings: rather than relying solely on imports, vulnerability should be assessed using reliance, production capacity, price exposure, and transit intensity.

3. Data and methodology

3.1 Data

The MoSPI Energy Statistics 2025 series for FY 2014–15 through FY 2023–24 is used in the study. The Ministry of Petroleum and Natural Gas, the Central Electricity Authority, the Office of the Coal Controller, the Ministry of New and Renewable Energy, the Office of the Economic Adviser, the National Accounts Division, and the Geological Survey of India are the sources of the data, according to MoSPI. [2] Production,

consumption, imports, exports, wholesale pricing, economic energy indicators, and energy accounting are all covered in the publication.

The high-speed diesel wholesale price index (WPI, 2011–12 = 100) as a transport-linked price-stress proxy; transport energy intensity in megajoules per ₹1,000 of GVA; economy-wide energy intensity in megajoules per rupee; crude oil production and imports in MT; crude oil availability in MT; net crude oil import dependency in percent; and real GDP at 2011–12 prices. MoSPI tracks energy balances in kilotonnes of oil equivalent, production/consumption in petajoules when appropriate, prices through WPI, and energy amounts in product-specific physical units. [2]

3.2 Indicators

The first indicator is crude-oil import dependence:

$$CID_t = \frac{Net\ crude\ oil\ imports_t}{Total\ crude\ oil\ supply_t} \times 100.$$

MoSPI's published series gives CID directly. Its Table 5.3 reports crude-oil production, net imports and availability, while Table 8.14 reports the corresponding import-dependency series. [3], [9]

Domestic-production erosion, which is the min–max normalized inverse of domestic production, is the second indicator. Years with smaller domestic output are given a higher score. Price stress, as determined by the min–max normalized high-speed-diesel WPI, is the third. Transport stress, which is determined by the min–max normalized transport energy intensity, comes in fourth. Rather than being implicit assertions about geopolitical risk, these are purposefully observable, policy-relevant indicators.

3.3 Composite Crude Oil Energy Vulnerability Index

The equal-weight CO-EVI is:

$$CO\text{-}EVI_t = \frac{CID_t^* + Price_t^* + Transport_t^* + ProductionErosion_t^*}{4},$$

where each component is normalized to 0–100 over the ten-year sample and a larger value denotes greater vulnerability. The index is a descriptive measurement tool, not a causal estimate. Equal weighting is transparent and avoids assigning unsupported normative weights. A publication-quality extension should test alternative weights, principal-component weights, entropy weights and leave-one-component-out sensitivity.

3.4 Empirical techniques

There are four methods employed. First, structural movement is summarized by CAGR and endpoint changes. Second, Pearson correlations do not indicate causation; rather, they represent co-movement. Third, the average yearly change in the index and dependence is estimated using a time-trend regression. Fourth, a straightforward income-import relationship can be found using a log-log regression of crude oil imports on real GDP. The regression is diagnostic rather than a definitive elasticity model because the annual sample contains only ten observations. With this sample size, a complete ARDL, NARDL, or VAR should not be presented as confirmatory; instead, a longer monthly or quarterly dataset and meticulously tested stationarity, delays, structural breaks, and small-sample corrections are needed.

The period comparison treats FY 2020–21 as the pandemic observation and compares the pre-pandemic years FY 2014–15–2019–20 with the recovery years FY 2021–22–2023–24. This is a descriptive break analysis, not an event-study causal design.

4. Results

4.1 Trade and production trends

Crude-oil imports rose from 189.43 MT in FY 2014–15 to 234.26 MT in FY 2023–24, an increase of 44.83 MT or 23.7%; the CAGR was 2.39%. MoSPI's trade table records imports of 226.95 MT in FY 2019–20, a COVID-era fall to 196.46 MT in FY 2020–21, and a recovery to 234.26 MT in FY 2023–24. [1] Domestic crude-oil production fell from 37.46 MT to 29.36 MT, a decline of 8.10 MT or 21.6%, with a CAGR of −2.67%. MoSPI's production table reports 29.18

MT in FY 2022–23 and only a marginal increase to 29.36 MT in FY 2023–24. [10]

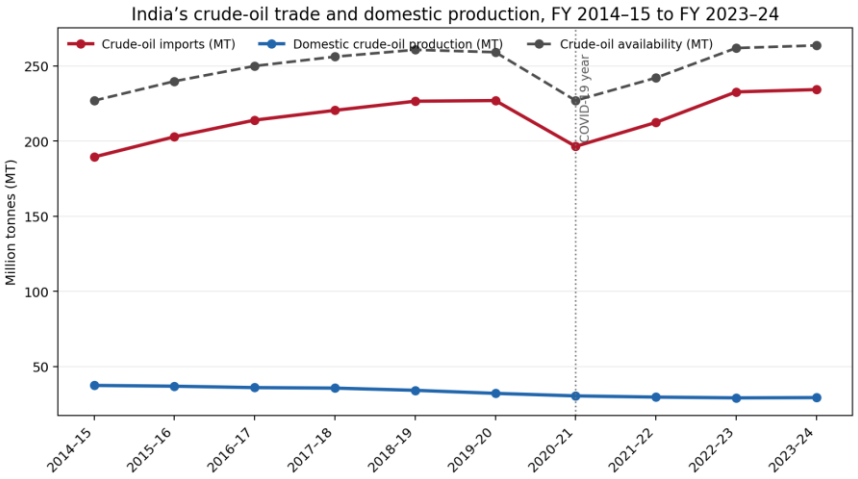
The combined effect was a widening import-production imbalance. Crude-oil availability increased from 226.90 MT to 263.62 MT, while net imports increased from 189.43 MT to 234.26 MT. [9] The import-dependency ratio rose from 83.49% to 88.86%, a 5.37-percentage-point increase. MoSPI reports that crude-oil dependency was 88.86% in both FY 2022–23 and FY 2023–24, so the latest year represents a historically high plateau rather than a further increase. [3]

The post-pandemic pattern is more concerning than the full-period CAGR alone. Imports averaged 213.35 MT over FY 2014–15–2019–20, fell to 196.46 MT in FY 2020–21, and averaged 226.45 MT in FY 2021–22–2023–24. Domestic production averaged 35.41 MT before the pandemic, fell to 30.49 MT in FY 2020–21 and averaged 29.41 MT during the recovery years. The recovery therefore restored import demand more strongly than it restored domestic production.

Table 1. India's crude-oil production, imports, availability and import dependence, FY 2014–15 to FY 2023–24.

Financial year	Domestic production (MT)	Crude-oil imports (MT)	Crude-oil availability (MT)	Import dependence (%)
2014–15	37.46	189.43	226.90	83.49
2015–16	36.94	202.85	239.79	84.59
2016–17	36.01	213.93	249.94	85.59
2017–18	35.68	220.43	256.12	86.07
2018–19	34.20	226.50	260.70	86.88
2019–20	32.17	226.95	259.12	87.59
2020–21	30.49	196.46	226.95	86.56
2021–22	29.69	212.38	242.07	87.73
2022–23	29.18	232.70	261.88	88.86
2023–24 (P)	29.36	234.26	263.62	88.86

Source: MoSPI Energy Statistics 2025; crude-oil production, trade and availability series [3], [9], [10]. P = provisional.



4.2 Price and transport exposure

The high-speed-diesel WPI rose from 114.8 in FY 2014–15 to 171.9 in FY 2023–24, with a peak of 191.4 in FY 2022–23. MoSPI's WPI series shows the sharpest recent price stress in FY 2021–22 and FY 2022–23, followed by partial easing in FY 2023–24. [1] This pattern matters because petroleum prices affect transport,

manufacturing and agriculture, sectors that MoSPI identifies as heavily dependent on affordable energy.

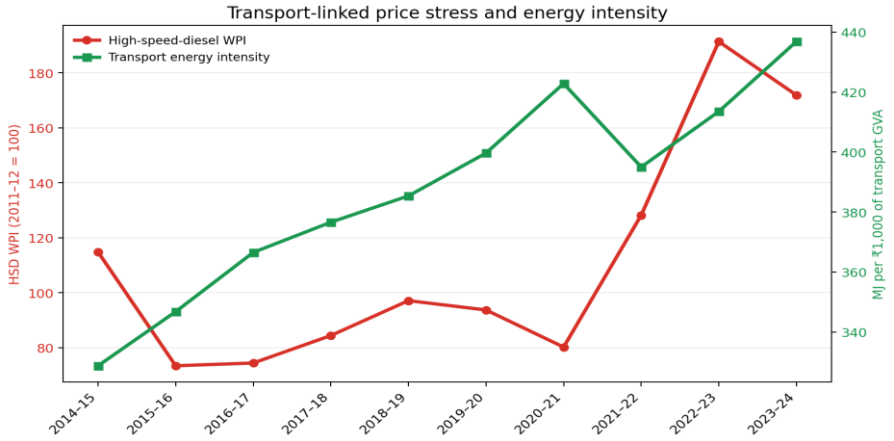
Transport energy intensity increased from 328.72 to 436.85 MJ per ₹1,000 of GVA, a 32.9% increase. MoSPI defines sectoral energy intensity as energy use per unit of sectoral GVA and identifies transport as a major oil-consuming sector. [3] The transport-intensity series fell briefly in FY 2021–22 but reached its maximum in FY 2023–24. This creates a vulnerability channel that is distinct from economy-wide efficiency: India can become more energy-efficient in aggregate while transport becomes more oil-exposed.

Economy-wide energy intensity improved from 0.2703 MJ per rupee in FY 2014–15 to 0.2180 MJ per rupee in FY 2023–24. [3] The simultaneous decline in overall energy intensity and rise in transport intensity implies sectoral heterogeneity, not a contradiction. It supports a policy shift from aggregate energy-efficiency targets alone toward transport-specific oil-displacement targets.

Table 2. Transport-linked price stress and energy intensity, FY 2014–15 to FY 2023–24.

Financial year	HSD WPI (2011–12 = 100)	Transport energy intensity (MJ/₹1,000 GVA)	Economy-wide energy intensity (MJ/₹)
2014–15	114.8	328.72	0.2703
2015–16	73.4	346.76	0.2556
2016–17	74.4	366.52	0.2414
2017–18	84.4	376.60	0.2356
2018–19	97.1	385.37	0.2338
2019–20	93.7	399.66	0.2239
2020–21	80.2	422.84	0.2176
2021–22	128.2	395.01	0.2198
2022–23	191.4	413.52	0.2192
2023–24 (P)	171.9	436.85	0.2180

Source: MoSPI Energy Statistics 2025; WPI, sectoral energy-intensity and overall energy-intensity series [1] . P = provisional.



4.3 CO-EVI results

The CO-EVI increased from 8.77 in FY 2014–15 to 95.33 in FY 2023–24. The index rose gradually through FY 2019–20, remained high in FY 2020–21 because domestic production and transport intensity were weak, and then increased sharply during the recovery and price-shock period. The values are: 8.77, 10.86, 23.11, 30.79, 43.74, 55.76, 58.54, 70.14, 94.61 and 95.33.

The index's 86.56-point endpoint increase is driven primarily by the deterioration in the normalized domestic-production and transport components, with import dependence also reaching its maximum. The result should not be read as India becoming 10.9 times more vulnerable in a cardinal sense. It means that the year 2023–24 is near the worst observed point on the selected four-dimensional scale, while 2014–15 is near the best observed point.

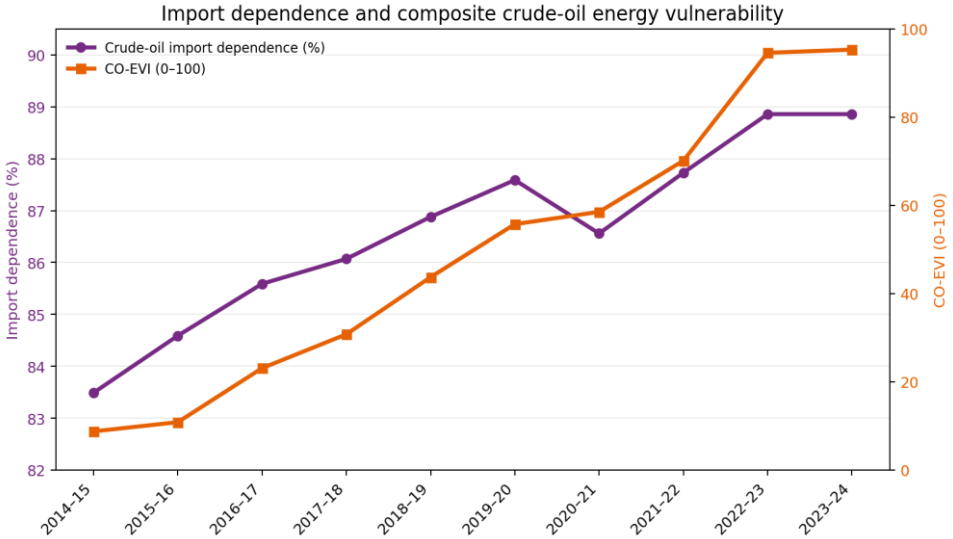
The diagnostic correlations support the index logic. Import dependence correlates positively with imports ($r = 0.817$), crude-oil availability ($r = 0.683$), high-speed-diesel WPI ($r = 0.666$), transport intensity ($r = 0.904$) and real GDP ($r = 0.976$), and negatively with domestic production ($r = -0.906$) and economy-wide energy intensity ($r = -0.920$). These associations are descriptive and are influenced by common time trends; they do not establish that GDP growth causes import dependence or that price increases cause the full index movement.

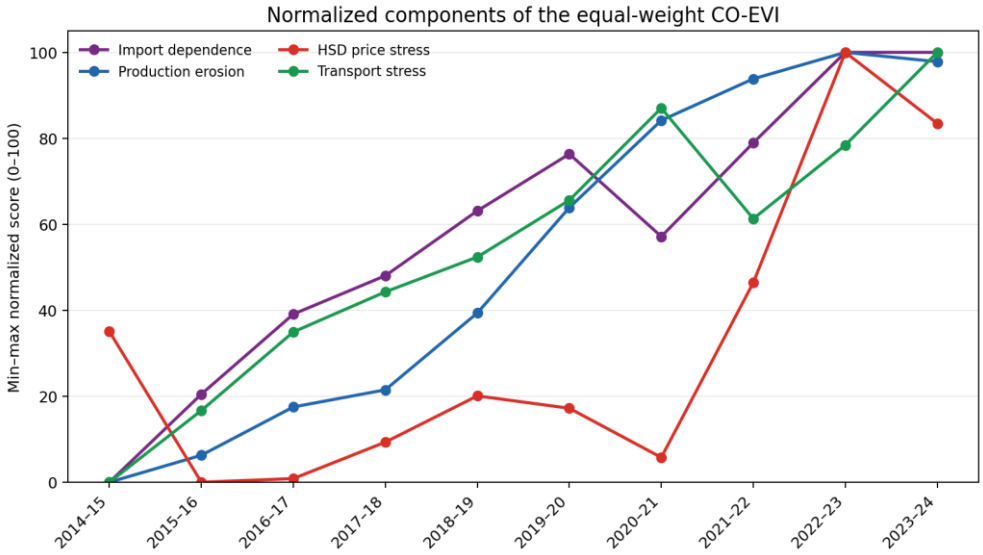
A linear time trend gives an average increase of 0.552 percentage points per financial year in crude-oil import dependence, with $R^2 = 0.913$. The corresponding CO-EVI trend is 10.276 index points per year, with $R^2 = 0.978$. Given the short sample, these fits summarize persistence rather than prove a stable law of motion.

Table 3. Components and equal-weight CO-EVI, FY 2014–15 to FY 2023–24.

Financial year	Import dependence score	Production-erosion score	HSD price-stress score	Transport-stress score	CO-EVI
2014–15	0.00	0.00	35.08	0.00	8.77
2015–16	20.48	6.28	0.00	16.68	10.86
2016–17	39.11	17.51	0.85	34.96	23.11
2017–18	48.04	21.50	9.32	44.28	30.79
2018–19	63.13	39.37	20.08	52.39	43.74
2019–20	76.35	63.89	17.20	65.61	55.76
2020–21	57.17	84.18	5.76	87.04	58.54
2021–22	78.96	93.84	46.44	61.31	70.14
2022–23	100.00	100.00	100.00	78.42	94.61
2023–24 (P)	100.00	97.83	83.47	100.00	95.33

Note: Scores are min–max normalized to 0–100 over the ten-year sample. CO-EVI is the equal-weight mean of the four component scores; calculations use the MoSPI series in the reproducible dataset [1], [3] . P = provisional.





4.4 Income–import association

The log–log diagnostic regression of crude-oil imports on real GDP gives an estimated import–income association of 0.369, with $R^2 = 0.634$. This estimate is not a structural demand elasticity because the model omits price, exchange rate, refinery activity, transport demand, policy interventions and supply disruptions, and because ten annual observations cannot support a rich dynamic specification. It nevertheless indicates that import growth accompanied economic expansion during the sample. The result is consistent with earlier Indian evidence that crude-oil import demand has a long-run relationship with income and price and that income growth can drive import demand. [7]

5. Discussion

The evidence supports a structural-vulnerability interpretation. India's crude-oil imports increased while domestic production declined, raising import dependence to 88.86%. The country's expanding refining capacity can support petroleum-product exports, but refinery capability does not remove exposure to the imported crude feedstock. MoSPI reports that petroleum-product net imports were negative and became more negative in the latest period, indicating net exports of products, while crude-oil net imports remained very large. [9]

The vulnerability is also price-sensitive. The 2022–23 diesel WPI peak coincided with high crude-oil import dependence and a high CO-EVI. Earlier Indian studies find that oil-price shocks affect inflation, foreign-exchange reserves, fiscal conditions, output and the real exchange rate. [4], [6] The present annual evidence cannot estimate those transmission effects, but it identifies the exposure base through which they operate: a large import requirement and a transport sector with rising energy intensity.

War and West Asia risk should be treated as supply-concentration and route-risk questions, not as a dummy variable inserted without measurement. A parliamentary committee summary reports that a majority of India's hydrocarbon imports were sourced from the Middle East, that regional geopolitical tensions can disrupt supply, and that diversification, strategic contracts, green hydrogen, electric vehicles, biofuels and energy efficiency were recommended responses. [11] A stronger follow-up paper should add annual or monthly supplier concentration, shipping distance, insurance cost, freight rates and a geopolitical-risk index. Those variables are not present in the MoSPI annual tables used here.

Transport electrification is the most direct demand-side response. MoSPI identifies transport as a major oil-consuming sector, while recent India research reports a substitution relationship between electricity prices and crude-oil import demand. [8] Electrification will reduce oil vulnerability only if electricity is reliable, affordable and increasingly low-carbon;

otherwise it may shift part of the energy-security problem from imported crude to imported coal, gas or critical minerals. MoSPI's data show that renewable energy's share in electricity generation excluding large hydro rose from 5.96% to 12.10% between FY 2014–15 and FY 2023–24, while thermal generation still accounted for 78.54% in FY 2023–24. [3]

6. Policy implications

First, set an oil-displacement target rather than an import-only target. Import dependence can fall temporarily because demand collapses, domestic production rises, or refinery trade changes. The more durable target is a reduction in oil use per unit of transport service and in oil's share of final energy consumption. Oil products accounted for 38.90% of total final energy consumption in FY 2023–24, while electricity accounted for 21.63%. [3]

Second, prioritize transport electrification and efficiency. Public buses, rail freight, two- and three-wheelers, urban logistics and charging infrastructure should be evaluated using barrels displaced, peak-load implications and lifecycle emissions. The target should be measurable in reduced transport energy intensity and reduced crude-oil demand, not only installed charging capacity. **Third, diversify supply and reduce route concentration.** Supplier diversification, long-term contracts, flexible storage and maritime contingency planning should be assessed jointly. Diversification is valuable not simply because it changes the supplier list, but because it reduces the probability that one regional disruption interrupts a large share of supply. The parliamentary review explicitly recommends diversification and highlights West Asia exposure. [11] **Fourth, expand strategic stocks and improve transparent stress testing.** MoSPI identifies strategic fuel stocks per corresponding consumption as an energy-security indicator. [3] India should publish stress tests for a 10%, 25% and 50% disruption in imported crude, combined with price and freight shocks, and report days of coverage by refinery region.

Fifth, protect macroeconomic resilience without weakening efficiency incentives. Price stabilization can prevent abrupt inflationary transmission, but persistent suppression of fuel prices can reduce incentives for conservation and clean-energy substitution. Policy should therefore combine targeted support for vulnerable households and essential transport with automatic, transparent pass-through for higher-income and non-essential consumption.

Sixth, treat domestic production as one layer, not the complete solution. Domestic production fell at a −2.67% CAGR over the decade, so exploration, enhanced recovery and technology may help, but production policy cannot by itself offset a 234.26-MT import requirement. Supply-side measures should be evaluated against cost, recovery rate, environmental impacts and the time needed to add output.

7. Robustness, limitations and research agenda

The index is reproducible but not unique. Min–max normalization is sensitive to endpoints, equal weights are normative, and the high-speed-diesel WPI is a proxy for petroleum-price stress rather than the landed crude import price. A robustness appendix should recompute the index with z-scores, principal components, entropy weights and alternative price measures.

The sample contains only ten annual observations, so causal claims, dynamic lag structures and conventional significance tests are fragile. The paper therefore does not claim that the trend regression or correlations identify causal effects. MoSPI's source data are annual, unseasonally adjusted and partly provisional; it states that final data can revise earlier series and that no seasonal or temperature correction is applied. [2] A Scopus-targeted extension should use monthly data for January 2014–December 2024. A suitable design would combine monthly crude imports, domestic production, Brent or Indian crude import prices, USD/INR, CPI fuel inflation, industrial production, current-account variables, refinery utilization, electricity prices, EV registrations, supplier concentration and a

geopolitical-risk measure. The recommended sequence is: unit-root tests with breaks; Bai–Perron or equivalent break tests; ARDL bounds testing if variables are I(0)/I(1); NARDL for positive and negative price changes; Toda–Yamamoto causality as a robustness check; and local projections or a structural VAR for impulse responses. The annual MoSPI series should remain the benchmark aggregation check.

Future work should also model supplier concentration using the Herfindahl–Hirschman Index, route exposure using shipping and chokepoint data, and resilience using strategic-stock coverage. It should distinguish crude-oil import dependence from petroleum-product trade balance, because a country can be a major crude importer and a refined-product exporter at the same time. MoSPI's tables make that distinction visible. [1]

8. Conclusion

India's crude-oil vulnerability increased materially between FY 2014–15 and FY 2023–24. Imports rose 23.7% to 234.26 MT, domestic production fell 21.6% to 29.36 MT, and net import dependence rose from 83.49% to 88.86%. The country's crude-oil availability expanded, but the expansion was import-led. Transport energy intensity rose by 32.9%, while the high-speed-diesel WPI remained well above its early-period level. In contrast, economy-wide energy intensity improved, showing that aggregate efficiency gains have not yet removed transport-specific oil exposure.

The CO-EVI summarizes this pattern transparently: its normalized value rose from 8.77 in FY 2014–15 to 95.33 in FY 2023–24. It is not a claim that vulnerability has a literal cardinal scale; it is evidence that the latest year is close to the sample's highest-risk configuration across import dependence, price stress, transport intensity and domestic-production erosion. India's strongest policy response is therefore a portfolio: electrify and improve transport, diversify crude suppliers and routes, strengthen strategic stocks, preserve macroeconomic buffers, and pursue credible domestic production and cleaner substitutes. The next empirical step is a monthly, break-aware nonlinear model that can test the causal channels rather than only documenting their annual co-movement.

Data availability and reproducibility

The complete annual dataset and the calculated equal-weight CO-EVI are provided with this paper. MoSPI's *Energy Statistics 2025* is the primary data source; its statistical metadata identify the source ministries, 2014–15–2023–24 time coverage, annual frequency, units and revision policy. [2] The dataset should be updated when MoSPI replaces provisional FY 2023–24 observations with final values.

Funding: No funding information was available for this draft.

Conflict of interest: No conflict-of-interest information was available for this draft.

References

"Energy statistics india - 2024," internet, 2025, Available: https://mospi.gov.in/sites/default/files/publication_reports/Energy_Statistics_2025/Chapter4_27032025.pdf

"Annexure III," internet, 2025, Available: https://mospi.gov.in/sites/default/files/publication_reports/Energy_Statistics_2025/Annexure%20III_27032025.pdf

"Https://mospi.gov.in/sites/default/files/publication_reports/energy_statistics_2025/Chapter8_27032025.pdf," internet, 2025, Available: https://mospi.gov.in/sites/default/files/publication_reports/Energy_Statistics_2025/Chapter8_27032025.pdf

S. G. & Kakali Kanjilal, "Oil price shocks on indian economy: Evidence from toda yamamoto and markov regime-switching VAR," internet, 2014, Available: https://ideas.repec.org/a/taf/macfem/v7y2014i1p218-227.html

D. T. R. & Saurabh Goyal, "Global commodity and oil price movements, macroeconomic performance and challenges for an emerging economy: The indian experience," internet, 2018, Available: https://ideas.repec.org/a/sae/globus/v19y2018i3p218-227.html

"Mint street memos - reserve bank of india," internet, 2017, Available: https://www.rbi.org.in/Scripts/MSM_Mintstreetmemos17.aspx

Ghosh and Sajal, “Import demand of crude oil and economic growth: Evidence from india,” internet, 2009, Available: https://ideas.repec.org/a/eee/enepol/v37y2009i2p218-227.html

“Policies to reduce india’s crude oil import dependence amidst clean energy transition,” internet, 2019, Available: https://www.sciencedirect.com/science/article/abs/pii/S0301421523003890

https://mospi.gov.in/sites/default/files/publication_reports/Energy_Statistics_2025/Chapter5_27032025.pdf

https://mospi.gov.in/sites/default/files/publication_reports/Energy_Statistics_2025/Chapter3_27032025.pdf

T. Chakrabarty, “Standing committee report summary,” internet, 2024, Available: https://prsindia.org/files/policy/policy_committee_reports/Report_Summary-Import_of_Crude_Oil.pdf