



FDRA

Footwear's exposure to oil prices & the impact on shoe costs

With two major wars impacting roughly 30% of global oil and gas production, oil-driven supply chain costs will be more volatile and uncertain than at any time since World War II. Historical data still matters for benchmarking, but understanding company behavior—and cost pressures across the entire footwear supply chain—is now critical to forecasting total impact

FDRA

Founded in 1944, FDRA is governed and directed by footwear executives and is the only trade organization focused solely on the footwear industry. Members include nearly all U.S. footwear manufacturers, brands, retailers and importers. In all, FDRA supports nearly 500 companies and brands worldwide, representing 98% of total U.S. footwear sales, making it by far the largest and most respected American footwear trade and business association. Learn more at [FDRA.org](https://www.fdra.org)

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Questions or media requests, please contact info@fdra.org

Key Findings

Based on current conditions

If oil holds above \$90 per barrel for consecutive months (a 25%+ increase since February 28, 2026 of \$72.50 Brent crude), cost pressures will accelerate at increased speed across the footwear supply chain with reduced ability to absorb increases. This reflects an historic high-risk energy environment, where sustained volatility drives faster cost pass-through and **risk-based pricing behavior** across suppliers.

Expected total impact

- **FOB: ~1.5–3% increase per pair for some by mid-summer, most starting late summer imports (Fall/Winter retail).**
 - Driven by combined increases in **materials, factory energy, and logistics.**
 - Oil prices influence more than half of a shoe's total cost structure across materials, production, and transportation.

Breakout Cost Areas of Note

Materials (Tier 4/3/2 → Tier 1):

- **~1–2.5% material cost increases passed to T1 factories within 4–12 weeks, dependent on demand conditions, order volume, and margin negotiations**
 - ~70% of materials in a synthetic shoe are **petrochemical-based**. ~30% of those material costs are **directly tied to crude oil prices**

Factory Production (Tier 1):

- **~1–1.5% FOB cost increase to shoe companies** (materials + energy mix) expected by early summer if oil remains elevated
 - Factory energy mix: ~10% direct fuel (diesel, LPG, LNG), ~85–90% electricity cost increases felt in 2-6 weeks.
 - Rising oil and gas prices may increase **electricity and process energy costs; supply disruptions (fuel shortages)** could materially impact production capacity.

Logistics & Transit

- Freight and transport costs, direct exposure, **increasing in real time**. Impact varies by **region, contract structure, and carrier exposure**.

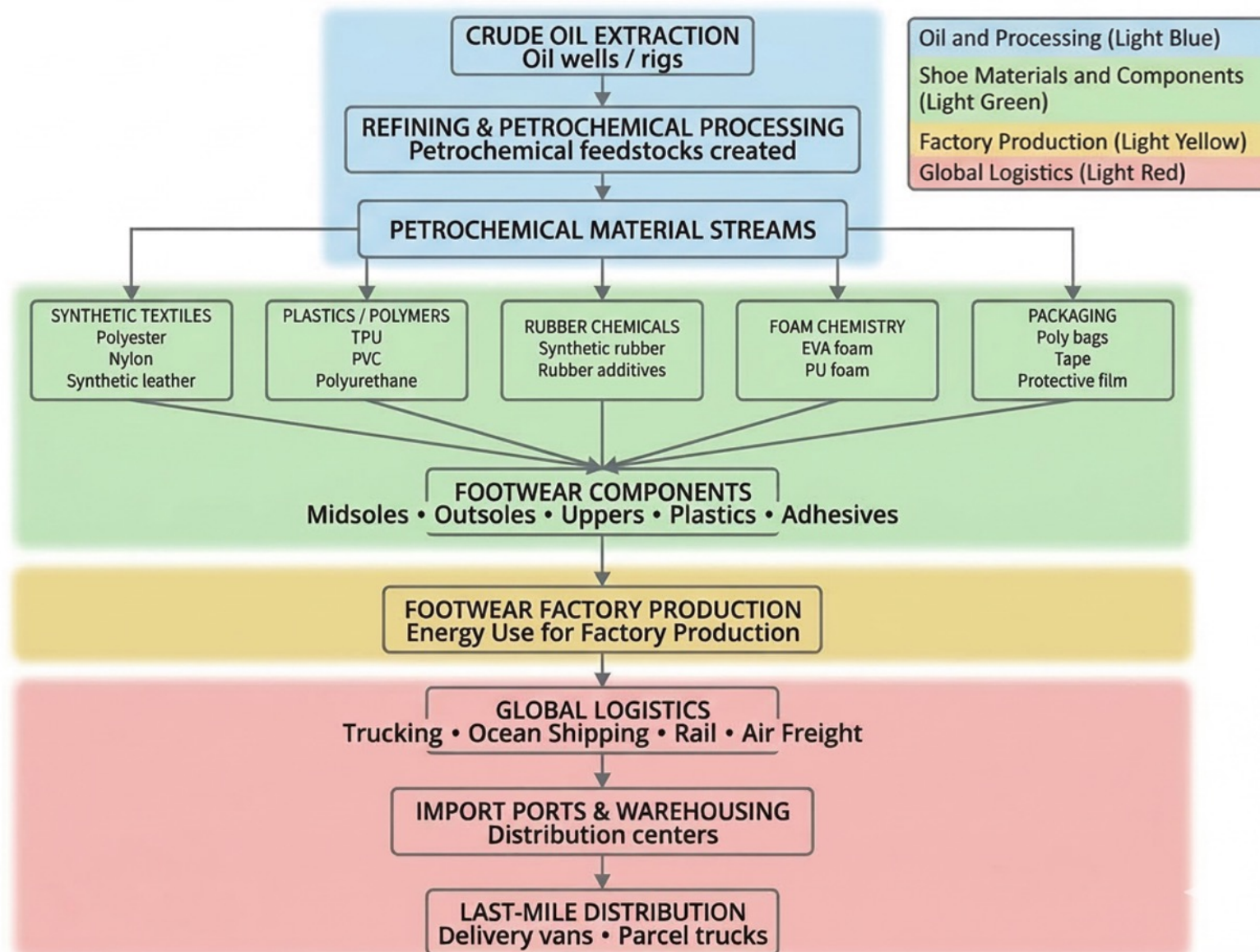
This Brief's Focus

This brief examines the impact of rising oil prices on your FOB costs (Tier 4–Tier 1) and analyzes historical logistics costs to provide greater insight into how cost increases may spread across the supply chain.

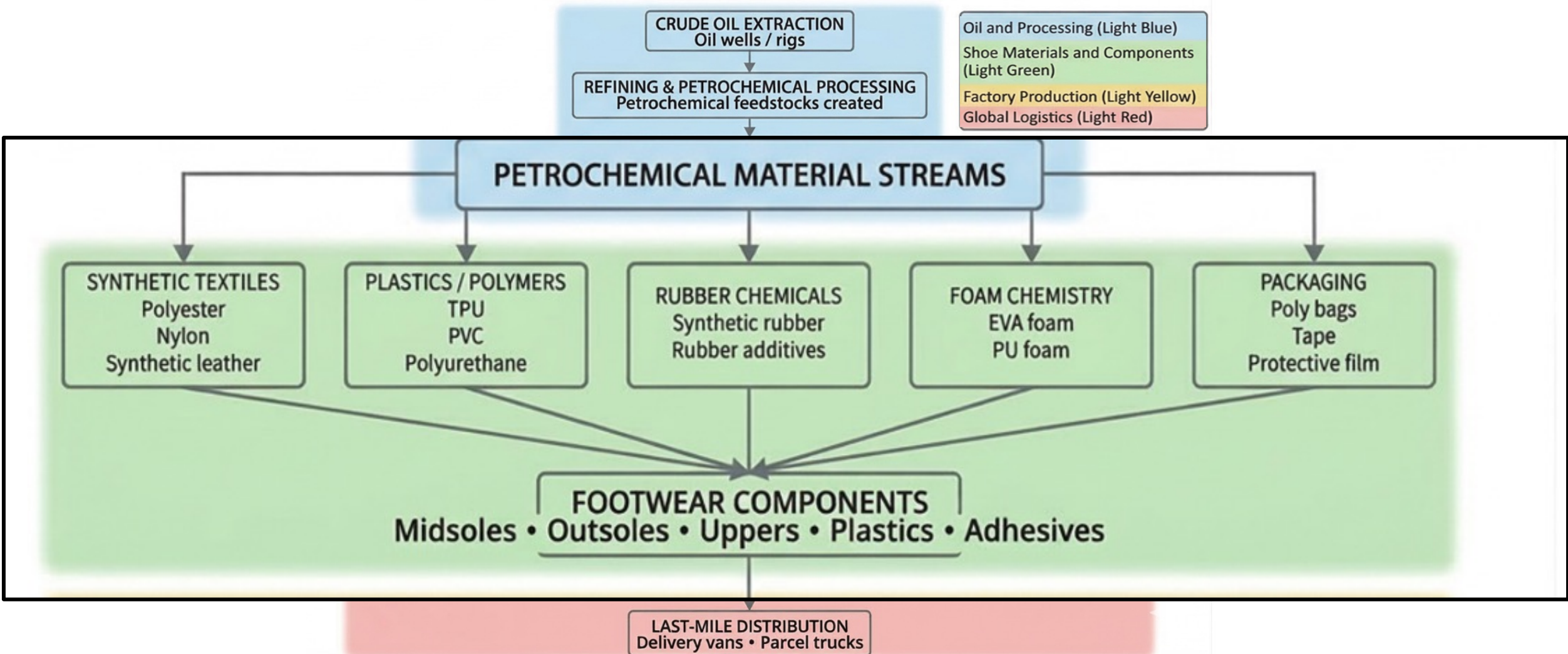
Of Note:

- Due to the myriad variety of materials, components, production locations, product types, volume, contract rates, and logistics models, used by different shoe companies, it is impossible to accurately quantify a cost impact.
- **Here we provide more clarity on *exposure* – helping show where you may need to look.**
- When it comes to what we imagine cost impacts at each level may be as oil rates increase, we will be honest on our level of certainty with a general range of amount and time.
- As such, **any cost increase assessments we provide should be considered directional**, to enhance your cost planning but not to be taken as planning ‘gospel’.
- The timing assessment is very difficult. With suppliers already absorbing tariff cost spikes, how much can they really absorb these new costs? And how fast will those costs be pushed along? Traditional economics points to lag times of months to years across the supply chain, but **fear and risk may cause increased costs to be passed along on a quicker timeline than one imagines.**

Oil is used in *every area* of the footwear supply chain

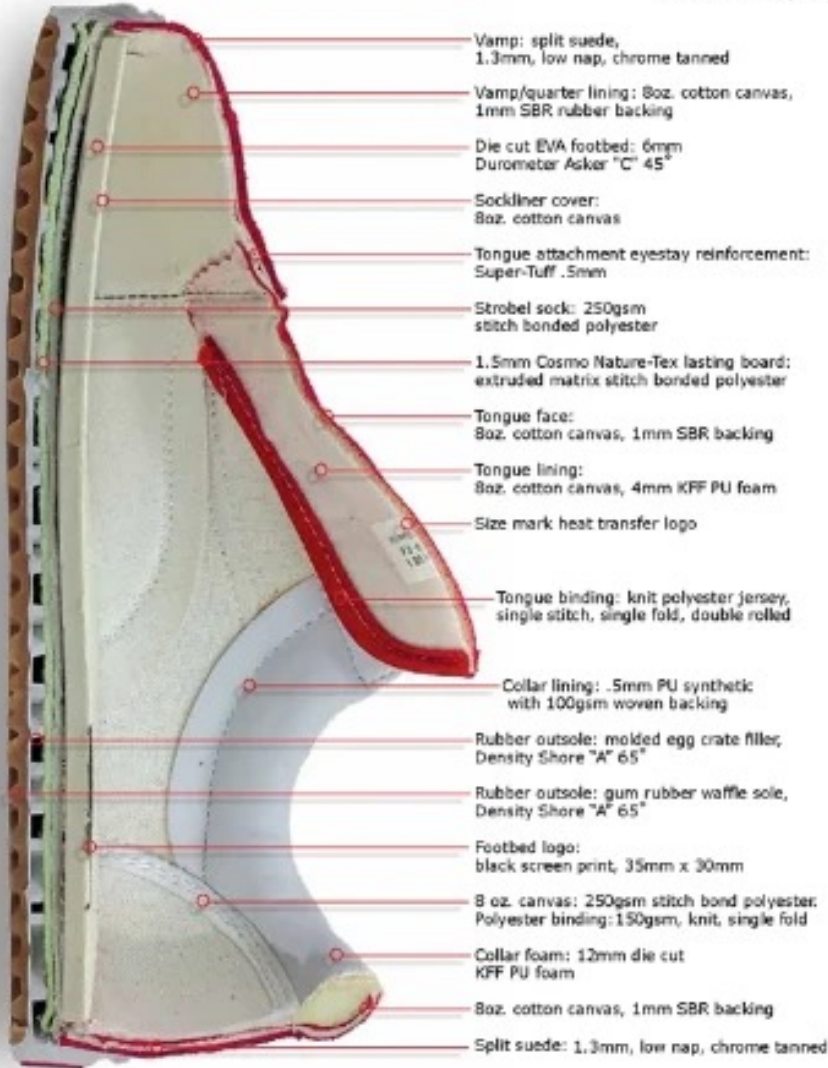


A deeper Look at Materials (T4 – T2 Levels)



A Large & Misunderstood Cost Area: Shoe Materials

Shoe Material Design Guide
Wade and Andrea Motani
www.sneakerfactory.net, 2017.



Many companies only consider oil price impacts on their transit costs (drayage, trucking, last mile delivery).

- However, oil is a direct feedstock for 30% of a basic synthetic shoe's materials and components. Another 40% of that same shoe's materials has *some exposure* to oil rates swings. So **basic shoes materials in total could have around 70% exposure, costs seen in T4-T2, to oil price swings.**
- This is important because there can be upwards of 70 materials and components that go into making shoes versus say 5 for a t-shirt. Further, while apparel is made predominantly from textiles, shoes contain a large number of diverse materials and components that have more exposure to oil price volatility.
- This is why we constantly say, "[shoes aren't shirts](#)" and need their own industry body, regulations, and standards.

An Example of 25 Key Materials & Components in Footwear That Heavily Rely on Oil/Petrochemicals

Foams (Cushioning)

1. **EVA (Ethylene-Vinyl Acetate)** – midsoles, insoles, cushioning
2. **PU Foam (Polyurethane)** – midsoles, insoles, comfort padding
3. **Expanded TPU (E-TPU)** – high-energy return midsoles
4. **PE Foam (Polyethylene foam)** – sockliners, padding

Plastics & Structural Components

5. **TPU (Thermoplastic Polyurethane)** – toe caps, overlays, heel counters
6. **PU films & laminates** – synthetic leather coatings
7. **PVC (Polyvinyl Chloride)** – trims, logos, components
8. **Polycarbonate plastics** – plates and structural parts
9. **Nylon plastics (PA6 / PA66)** – shanks, plates, reinforcements
10. **Polypropylene plastics (PP)** – eyelets, stiffeners, counters

Synthetic Textiles

11. **Polyester fabrics** – knit uppers, mesh uppers
12. **Nylon fabrics** – woven uppers, reinforcements
13. **Spandex / elastane** – stretch materials
14. **Microfiber synthetic leather** – PU-based synthetic leather

Rubber Compounds

15. **Synthetic rubber (SBR)** – outsoles
16. **Nitrile rubber (NBR)** – oil-resistant outsoles
17. **Thermoplastic rubber (TPR)** – outsole blends
18. **EVA rubber blends** – lightweight outsoles

**Even when natural rubber is used, most outsole compounds include petrochemical additives.*

Adhesives & Bonding

19. **Polyurethane adhesives** – primary shoe bonding system
20. **Hot-melt adhesives** – bonding textiles and components
21. **Solvent-based cements** – petroleum solvents

Threads, Films & Small Components

22. **Polyester thread** – stitching
23. **Nylon thread** – reinforcement stitching
24. **PU reinforcement films** – overlays
25. **TPU films** – heat-pressed graphics and overlays

Tier 4/3: Petrochemical Prep For Shoe Materials

Oil is a direct feedstock for chemical companies who refine it and begin petrochemical processing (ethylene, propylene, etc.). Petrochemical prices move strongly—but not perfectly—with oil. In the short term, about 70–90% of oil price changes pass through, moderating over time.

Cost impact pushed to Tier 2: High [*hard to eat 90%+ exposure to oil price volatility*]

- Short term (spot markets): ~7–9% increase per 10% oil price increase
- Contract / typical: ~5–7% increase per 10% oil price increase
- Down-cycle / lagged: ~3–6% increase per 10% oil price increase

Timeline of cost push to Tier 2: *Quickly Depending on Inventory Needs*

- Initial movement: 0–2 weeks
- Broad pass-through: 2–4 weeks

***How many materials could this really impact?
Next page please.***



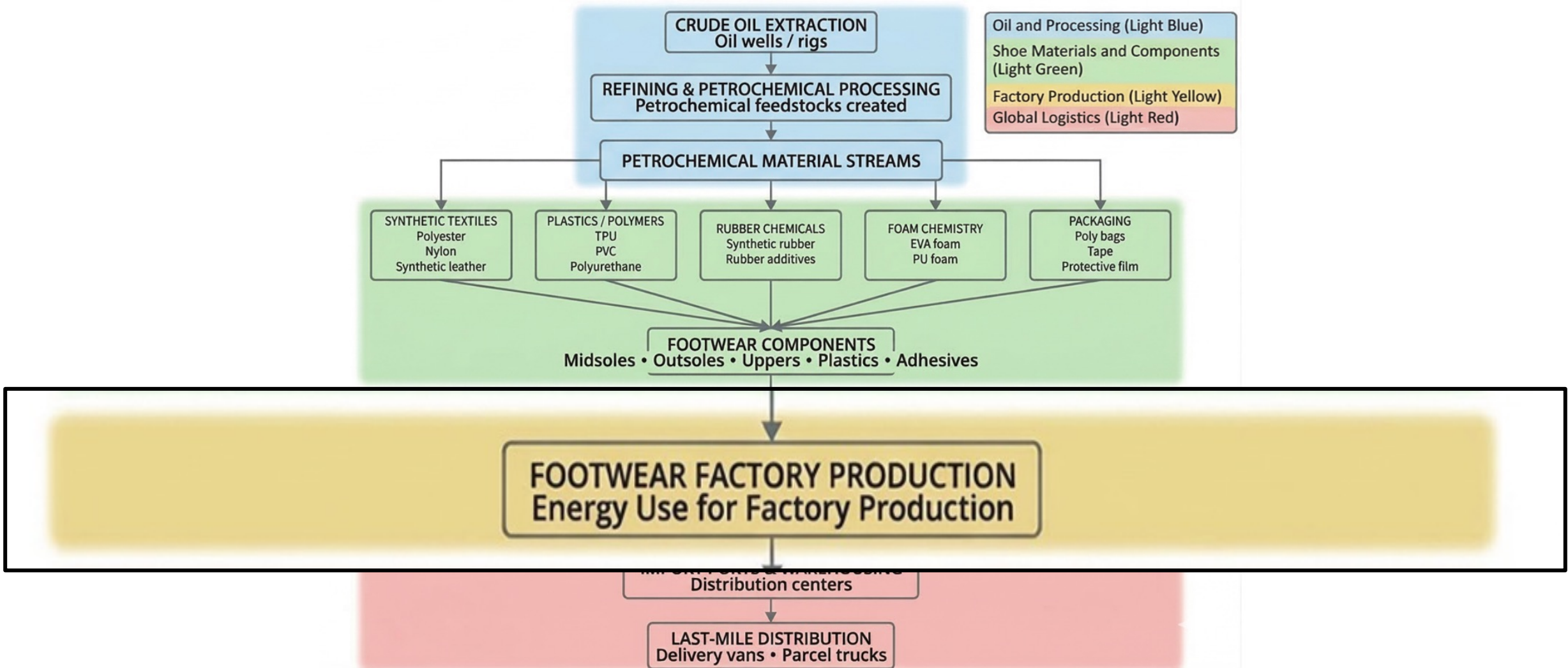
Tier 2: Shoe materials and component development

Here Tier 2 suppliers convert petrochemicals into usable footwear inputs (EVA, PU, polyester, rubber, adhesives). Material suppliers absorb and smooth oil volatility but still pass through meaningful cost increases within one to two months where they are able based on T3 prices and T1 demand/market.

- **Less exposure to oil price volatility than T3, but still moderately high:** ~60–75% of inputs for material development are petrochemical-based. ~25–40% of those input costs are directly tied to crude oil.
- **Cost impact pushed to Tier 1:** Moderate [depends on demand, contracts, margin, and markets]
 - ~1.5–2.5% increase in T2 pricing for every 10% increase in oil price increases.
 - Can be higher in foam-heavy / synthetic-heavy products (EVA, PU, TPU)
 - Can be lower in natural or mixed material constructions
- **Timeline of cost push to Tier 1:** Quickly Depending on Inventory Needs
 - Initial movement: 2–4 weeks
 - Broad pass-through: 4–8 weeks



A Deeper Look at T1 Manufacturing



Tier 1: Shoe Factories (Assembly for final goods)

Shoe factories experience oil impacts primarily through A) **material cost increases, with additional pressure from B) energy and operations**, typically materializing within one to three months depending on product type, demand, and contracts.

A) Material Costs

- The [Footwear Innovation Foundation's Carbon Report](#) (page 9) stated that 47% of shoes produced globally are classified as 'rubber/plastic'. Even shoes classified as 'textile' or 'leather' have exposure to oil prices, but shoes that are more casual or athletic – the growing number of today's market purchases – are highly exposed to oil prices.
- Again, overall, there are many different types of shoes and materials they are comprised of, but there is a higher level of oil as a feedstock in today's modern shoes than many imagine.



Tier 1: Shoe Factories (Assembly for final goods)

B) Energy used in footwear production

The [Footwear Innovation Foundation's Carbon Report](#) dives deep into energy sources used to power T1 factories (page 12)

- The report found that 87% of a T1 factory's energy comes from electricity. Oil and natural gas can still be a major feedstock for electricity in some parts of Asia, meaning they may likely see some electricity price increases in the near term.
- 10% of energy used in footwear production is directly from fuel and gas. Below provides a breakout. These have direct exposure to oil prices. There are also increased concerns of shortages of LPG.

Gasoline	2.72%	Equipment, small machinery
Diesel	2.38%	Generators, heavy equipment
Liquified Petroleum Gas (LPG)	0.51%	Heating, molding, process energy, propane for forklifts
Liquified Natural Gas (LNG)	5.04%	Thermal processes, boilers

Tier 1: Shoe Factories (Assembly for final goods)

C) Impacts unrelated to direct cost, but impact supply and the bottom line

Beyond costing impacts on T1, there are also issues that may impact production and labor issues.

Here we outline some ideas we are looking at that your company may consider:

1. Gas prices impact on factory worker transit costs: Will new inflation lead to new social unrest? Will this manifest in workers calling out of work, or perhaps protests for higher factory wages soon?
2. If rations happen for gas, or areas limit public transit in Asia, will workers be unable to get to the factory? How many would this impact, and what's the impact on the production line?
3. Energy rations, or shortages of certain fuels, could be likely in Asian countries. How will that impact the ability to run the factory? What's the scenario plan to match energy availability with labor?
4. Will oil rations/shortages impact the shipment of materials from T3/T2/T1? Will this impact the movement of finished shoes from the factory to the port?

Analysis: Example of FOB cost (hypothetical just on materials) ^{FDRA}

Looking at a sustained a 25% increase in oil prices + suppliers pricing in risk at record levels.

Sneaker FOB at \$20 in February 2026 could become \$20.30 FOB by **mid/late-summer (Fall/Winter retail)**.

*This will further boost the total tariff cost you pay.

Assumptions for our math:

- We use material calculations alone. There are energy cost increases that will occur at T1 we do not calculate.
- We assume a 40% absorption rate from T4-T1 and brands.
- We assume a faster pass-through rate than traditionally seen (quarter versus annual) due to the fact suppliers have already reduced margins due to high tariffs and now a growing fear that they will lose more money by inaccurate costing against higher risk.
- The timeline of when the cost increase begins to show in FOB, and when it is fully felt, is hard to truly know. Not just due to materials and product categories, but increases in risks, fears, and reduced cost absorption capacity across the supply chain will adjust supplier(s) behavior related costing decisions.

Math: February Sneaker FOB at \$20

Of that, assume: **\$10.00 = materials**

- **70% of materials have oil exposure = \$7.00**

But only **30% of that exposed material cost is directly tied to crude oil prices**. So: **$\$10.00 \times 70\% \times 30\% = \2.10**

- That means **\$2.10 of the \$20.00 FOB is directly sensitive to crude oil price changes *just through materials***

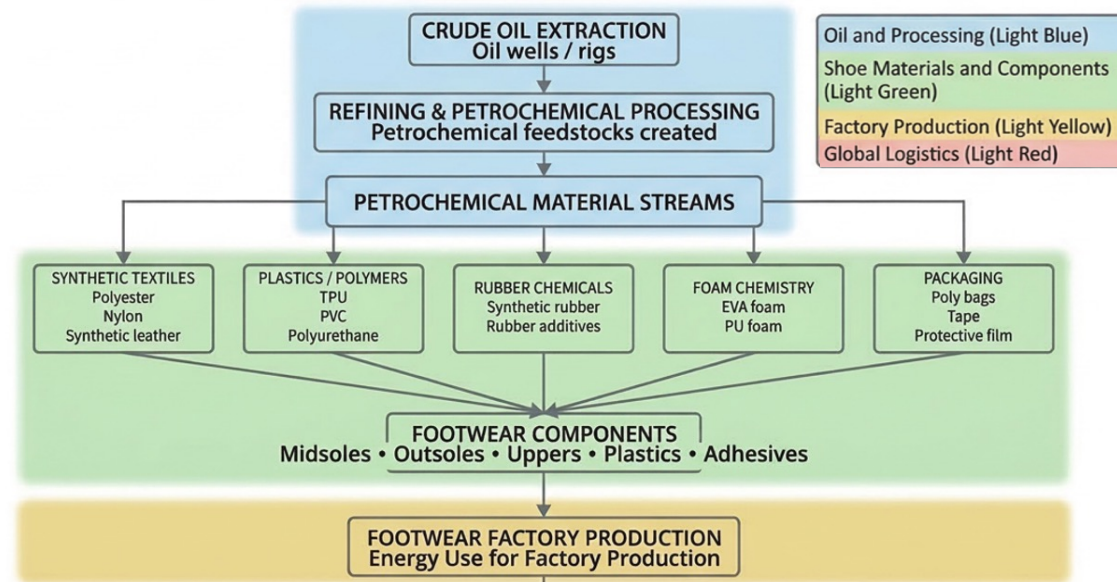
If oil rises **25%** – material costs as part of FOB = **$\$2.10 \times 25\% = \0.53**

- **Assume T4-T2 + factory and brand could absorb around 40% [can they?]**

The revised FOB would be: $\$20.00 + \$0.30 = \$20.30$

**just looking at material cost impacts*

A Quick Look at Shipping, Drayage, Freight



Insights into a well known/seen cost

Ocean shipping rates, China/East Asia to US West Coast

- Feb 27: \$1,850/FEU
- March 24: \$2,187/FEU—a two-month high
- *ocean rates outside of EU/Middle East have not felt the full fuel impacts yet.

Drayage Insights

- Companies operating in CA ports normally tie to a fuel scale is Linked to CA DOE (https://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_sca_w.htm).
- Math from a trucking company: “On Monday, March 16, CA DOE reported Ultra Low Sulfur at \$6.428 or 53% FSC between March 17 – March 23. Let’s say you have a base rate to pick up a container from LALB Marine Terminals to Ontario, CA of \$1,000. On top of the \$1,000, the customer will need to pay \$530 in fuel ($\$1,000 \times 0.53 = \530).
*There may also be emergency fuel surcharge of (currently) \$40.00 per container.”



Trucking

- Carriers often use a fuel surcharge matrix tied to a benchmark, with a surcharge applied as this benchmark crosses predefined bands as a percentage of freight or as \$/mile. Common tables add ~0.5–3.0% surcharge for each \$0.10–\$0.20/gal move in diesel, or roughly \$0.01–\$0.06 per mile per \$0.10/gal, depending on mode.
- So, with diesel up about \$1.57 since late February, that’s roughly 15.7 cents to 94 cents per mile in surcharges.
- **For last-mile costs**, here’s a 90-day history of fuel surcharges from UPS:
<https://www.ups.com/us/en/support/shipping-support/shipping-costs-rates/fuel-surcharges>