

Reshoring Total Cost of Ownership

How-to guide: what the workbook does, how to use it and what every number means.

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Reshoring Total Cost of Ownership

Compare offshore, nearshore and reshored sources for a part on total cost of ownership, with payback and the tariff at which each option wins.

For: Supply-chain and sourcing managers, buyers, operations and finance leaders, and owners weighing reshoring or nearshoring.

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Quick start

1. On Setup, type your currency, inventory carrying rate, the horizon for one-time costs and the duty base (FOB or CIF).
2. On TCO Model, enter the part, annual volume and the cost of a defective unit reaching you.
3. Name up to four options (option 1 is your current source) and fill in each one's price, freight, duty and tariff rates, lead times, defect rate, annual costs and one-time transition cost.
4. Read TCO per unit, the annual difference from option 1, payback and the break-even tariff; then open the Dashboard.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Your company, currency and the rates every option is costed with.
TCO Model	The part, its volume and up to four sourcing options, costed line by line to total cost of ownership.
Dashboard	Total cost of ownership of each sourcing option, what it is made of, payback, and how tariffs move the answer.
Method	How every number is calculated, with assumptions, limits and sources.
Verify	Self-check: the workbook's formulas recomputed on fixed inputs against an independent reference.

What each number means

Quantity	How it is calculated	Units
Customs value	Piece price, plus freight when the duty base on Setup is CIF value.	currency/unit
Duty and extra tariff	Customs value x duty rate; customs value x extra tariff rate.	currency/unit
Landed cost	Piece price + freight + brokerage, insurance and handling + packaging + duty + extra tariff.	currency/unit

Quantity	How it is calculated	Units
Inventory carrying	Landed cost x (transit weeks + safety-stock weeks) / 52 x the carrying rate on Setup: the yearly cost of owning that stock, per unit of annual volume.	currency/unit
Quality cost	Defects reaching you (PPM) / 1,000,000 x the cost of a defective unit.	currency/unit
Management and disruption	(Supplier management and travel + expediting and disruption allowance) / annual volume.	currency/unit
Transition cost, spread	One-time transition cost / horizon / annual volume.	currency/unit
Total cost of ownership	Landed cost + inventory carrying + quality + management and disruption + transition, per unit; x annual volume for the annual TCO.	currency/unit
TCO above piece price	TCO / piece price - 1.	%
Against option 1	Annual TCO - option 1's annual TCO (negative = saves), and TCO / option 1's TCO - 1.	currency/yr, %
Payback	One-time cost / ((option 1's TCO - its transition) - (this TCO - this transition)) x volume x 12. 'No payback' when the option does not save before its transition cost.	months
Break-even extra tariff	Option 1's extra tariff + (this TCO - option 1's TCO) / (option 1's customs value x (1 + carrying rate x option 1's weeks / 52)): a tariff point on option 1 also raises the value of its stock.	%
Tariff sensitivity chart	Option 1's TCO recomputed at extra tariffs of 0% to 60% in 5-point steps; the other options are flat.	currency/unit

Assumptions, limitations, sources and the self-check (the Verify sheet, which recomputes the workbook's formulas on fixed test inputs) are in the workbook. The last page shows the Dashboard with the example data for Ravensworth Lighting, a fictional business.

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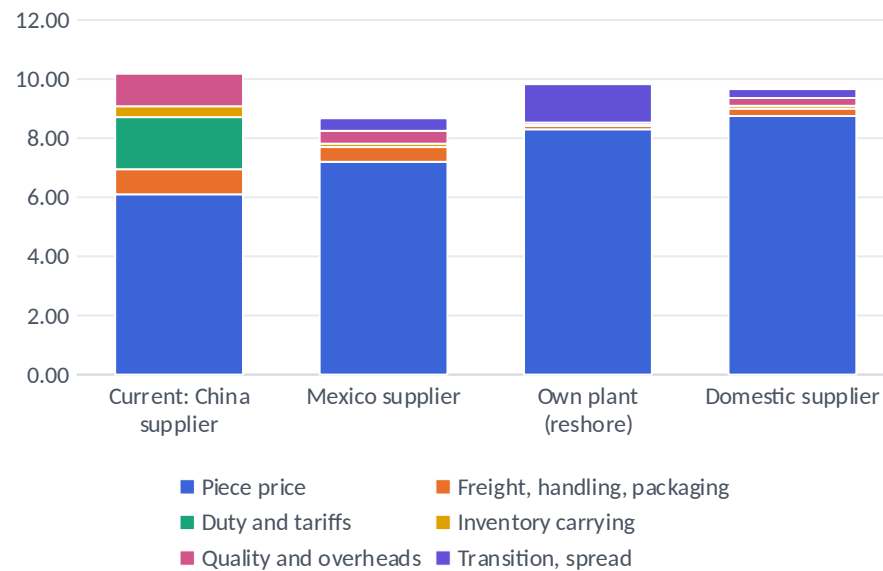
Total cost of ownership of each sourcing option, what it is made of, payback, and how tariffs move the answer.

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40,000 units a year. Option 1, Current: China supplier, is the current source every option is compared with. Money in USD.

LOWEST TOTAL COST OF OWNERSHIP	CURRENT SOURCE TCO (USD/UNIT)	YEARLY SAVING AGAINST CURRENT (USD)	PAYBACK OF ITS TRANSITION COST (MONTHS)
Mexico supplier 8.67 USD per unit	10.18 Piece price 6.10, TCO 67% above it	60,300 Lowest-TCO option, transition cost spread	13.2 One-time cost 85,000

What each option's TCO is made of (per unit)



TCO per unit as the extra tariff on option 1 changes

