Vehicle Supply-to-Demand Ratio Quintile

SUMMARY

The Vehicle Supply-to-Demand Ratio Quintile answers the following question for any vehicle you are considering procuring:

"How urgently do I need the parts from this vehicle compared to what I already have in my entire inventory?"

The answer is a grade on a 1-5 scale. The grade indicates whether the parts on that vehicle are in high demand and low supply (more attractive) or if they are overstocked and in low demand (less attractive).

The grade is derived from a ratio calculated for the vehicle.

Vehicle Supply / Demand Ratio = Total Supply of its Parts
divided by
Total Demand for its Parts

TOTAL SUPPLY (QUANTITY ON HAND)

This is the total number of a part you currently have in your entire inventory. If you have two alternators that fit a 2006 Chevrolet Trailblazer 4.2L, the supply is two.

TOTAL DEMAND (COUNT OF SEARCHES)

This is the total number of times users have searched for a part over a given period. The calculation is sophisticated and "fitment-aware," meaning if a customer searches for a part that fits three different types of vehicles, all three get credit for the search. The appendix to this document has a detailed explanation of this calculation.

A low ratio is good—it means supply is low relative to demand. A high ratio is bad—it means supply is high relative to demand.

The Vehicle Supply / Demand Ratio for the VIN being purchased is compared to all other vehicles in your inventory to determine a quintile tier.

HOW THE QUINTILE IS CALCULATED

1. **Calculate Supply for Every Part:** The system intakes every VIN in your inventory and creates a count of every unique part number on hand. For example, it might determine you have two instances of the part 80000021 (a transmission for certain 4.2L vehicles).
2. **Calculate Demand for Every Part:** Using historical search data, the system calculates the total "fitment-aware" search demand for every unique part number. For example, it might find that part 80000021 has a total of 0.8 assigned searches.
3. **Calculate the Ratio for Every Year-Make-Model-Trim-Series-Etc. in Your Inventory:** The system identifies every distinct combination of year, make, model, series, trim, etc. across your entire inventory. For each one, it calculates an aggregate Supply / Demand Ratio by summing the total supply and total demand of all its associated parts. This typically results in a list of thousands of ratios—one for each distinct vehicle type you stock.
4. **Determine the Quintile Boundaries:** The system sorts that list of thousands of ratios from lowest (best) to highest (worst). It then finds the values that divide the list into five equal groups (quintiles). These dividing lines, or "breakpoints," occur at the 20th, 40th, 60th, and 80th percentiles.
5. **Assign the Final Tier:** Finally, the specific vehicle you are evaluating has its own ratio calculated. This ratio is then compared against the breakpoints to determine which of the five groups it falls into. This group number is its final Tier.

OUTPUT

The output is a tier from 1 to 5.

- **Tier 1 - Very Low Stock:** (The top 20% of vehicles) Demand is high and your current supply is low. This is an attractive vehicle to procure for parts revenue (i.e., non-scrap revenue).
- **Tier 2 - Low Stock**
- **Tier 3 - Medium Stock**
- **Tier 4 - High Stock**
- **Tier 5 - Very High Stock:** (The bottom 20% of vehicles) Demand is low and your current supply is high. This is an unattractive vehicle to procure for parts revenue.

EXAMPLE

VIN 1GNDS13S762310424
2006 Chevrolet Trailblazer

Part	Quantity On Hand	Count Of Searches

Alternator (#80000021)	2	0.8
Rear Door Right Side	5	0
Engine	4	0
Caliper	2	2
. . .		
Total	405	7.4

Vehicle Supply / Demand Ratio = 405 / 7.4 = 54.7

Vehicle Supply / Demand Ratio of 54.7 is Tier 3.

Tier 1	Very Low Stock	0	< 17.9
Tier 2	Low Stock	17.9	< 35.2
Tier 3	Medium Stock	35.2	< 66.3
Tier 4	High Stock	66.3	< 211.3
Tier 5	Very High Stock	211.3	and greater

APPENDIX: Determining the Total Searches for the Parts on a VIN

SUMMARY

For each vehicle being considered for purchase, PartSpotter determines the portion of a self-service recycler's searches that are for the exact part on the vehicle being purchased, and provides a total for parts in all parttypes.

In the example below, the scrape value is the same for both VINs but PartSpotter reveals there is greater demand for the parts on the Envoy than the Trailblazer.

VALUE OF SCRAP

These year, make, and model vehicles have the same scrap value.

		
Year, make, and model	2006 Chevrolet Trailblazer	2006 GMC Envoy
Curb weight (lb)	4,323 - 4,510	4,323 - 4,510
# of catalytic converters	2	2
# aluminum wheels	4	4

VALUE OF PARTS

The recycler's information system shows a greater number of searches for parts on a 2006 Chevrolet Trailblazer then on a 2006 GMC Envoy.

Year and model	2006 Chevrolet Trailblazer	2006 GMC Envoy
Number of searches for the year, make, and model, for all parttypes	3	1

But what about searches for parts on other year, make, and model vehicles that have parts that fit the Trailblazer or Envoy?

PartSpotter automatically identifies these searches for a vehicle being procured.

Vehicle being procured	1GNDS13S762310424	1GKET63M462202369
Year, make, and model	2006 Chevrolet Trailblazer	2006 GMC Envoy
Search includes a part that fits and possibly parts that do not fit		
	Alternator 2006 Chevrolet Trailblazer (1 searches)	Alternator 2006 Chevrolet Trailblazer (1 searches)
		Air Flow Meter 2005 Chevrolet Silverado 1500 Pickup (1 searches)
	Caliper 2002 Chevrolet Trailblazer (1 searches)	Caliper 2002 Chevrolet Trailblazer (1 searches)
	Caliper 2007 Chevrolet Trailblazer (1 searches)	Caliper 2007 Chevrolet Trailblazer (1 searches)
		Coolant Pump 2004 GMC Sierra 1500 (1 searches)

	Coolant Pump 2004 Chevrolet Trailbalzer (1 searches)	
	Fuel Tank 2005 Chevrolet Trailblazer (1 searches)	Fuel Tank 2005 Chevrolet Trailblazer (1 searches)
	Fuse Box 2006 GMC Envoy XL (1 searches)	Fuse Box 2006 GMC Envoy XL (1 searches)
		Headlamp Assembly 2005 GMC Envoy (1 searches)
		Starter Motor 2003 Chevrolet Silverado (2 searches)
		Starter Motor 2006 Chevrolet Silverado (1 searches)
		Transmission 2007 GMC Yukon (2 searches)

PartSpotter then determines the portion of these searches for an exact part on the vehicle being considered for procurement.

Vehicle being procured	1GNDS13S762310424	1GKET63M462202369
Year, make, and model	2006 Chevrolet Trailblazer	2006 GMC Envoy
Number of searches for the exact part on the vehicle being procured (i.e., from any vehicle having any year, make, and model)	7.4	12.6

EXAMPLE FOR PARTTYPE ALTERNATOR

As shown in a table above, there is one search for parttype alternator on a 2006 Chevrolet Trailblazer.

The 2006 Chevrolet Trailblazer has three variants of alternator.

Engine Displacement	Part Number	Portion of Population Manufactured having the Part Number
4.2L	80000021	83%
5.3L	80000022	9%
6.0L	80000023	8%
		100%

The alternator on the 2006 Chevrolet Trailblazer being considered for purchase (VIN 1GNDS13S762310424) is part number 80000021.

Part number 80000021 is 83% of the population.

The portion of searches is 0.8 (= 1 x 83%).

Vehicle being procured	1GNDS13S762310424	1GKET63M462202369
Year, make, and model	2006 Chevrolet Trailblazer	2006 GMC Envoy
Part number	80000021	80000022
Portion of population	83%	9%
Total searches (for partype alternator on a 2006 Chevrolet Trailblazer)	1	1
Portion of searches	0.8	0.1

The 2006 GMC Envoy being considered for purchase (VIN 1GKET63M462202369) has part number 80000022, which fits a 2006 Chevrolet Trailblazer.

The portion of searches is 0.1 (= 1 x 9%).

PartSpotter automatically repeats this for all parttypes, and provides the total searches for a VIN.