

USPTO PATENT APPLICATION BRIEF

TITLE	System and Method for Adjusting Vehicle Value Based on Scarcity Factor
INVENTOR	Tony Rached, Appraisal Engine Inc. Atlanta, Georgia USA
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ABSTRACT

A system and method for dynamically adjusting the value of vehicles based on a calculated Scarcity Factor (SF) that takes into account the availability of comparable vehicles within a specified radius, the standard deviation of their prices, and the anticipated price of the vehicle. The SF influences a dollar adjustment to the vehicle's value, ensuring adjustments are made in real time based on current market conditions.

BACKGROUND

The valuation of vehicles in a dynamic market requires consideration of various factors, including the scarcity of comparable models. Traditional valuation methods may not account for the immediate market availability and pricing variability, leading to less accurate appraisals. This invention addresses these shortcomings by introducing a novel Scarcity Factor that adjusts vehicle values based on current market data.

SUMMARY OF THE INVENTION

The invention provides a method and system for calculating a Scarcity Factor (SF) to adjust the anticipated price of a vehicle. The SF is derived from the number of comparable vehicles available within a specified radius, the standard deviation of their prices, and the radius itself. This factor is used to apply a proportional dollar adjustment to the vehicle's anticipated price, ensuring the valuation reflects current market scarcity.

DETAILED DESCRIPTION

1. Scarcity Factor Calculation:

- a. **Inputs:** Anticipated price, maximum radius of comparables, maximum number of comparables, actual radius utilized, number of comparables that exist, comparables considered, and standard deviation of prices.
- b. **SF Formula:** The SF is calculated as $1 - (1 - SF) \times 0.11 - (1 - SF) \times 0.1$, where SF ranges from 0.1 to 1, with 1 indicating low scarcity and 0.1 indicating high scarcity. The formula ensures the dollar adjustment becomes less negative as scarcity decreases.

2. Dollar Adjustment Calculation:

- a. The dollar adjustment to the anticipated price is calculated as a percentage of the anticipated price, constrained to not exceed -10%. This adjustment is directly proportional to the SF, ensuring that adjustments are reflective of current market conditions.

3. Graphs and Models:

- a. Graphical representations illustrating the relationship between the SF and the dollar adjustment, showing how adjustments approach zero as SF approaches 1.
- b. Comparative graphs showing anticipated price adjustments under varying market scarcities.

4. Logical Statements:

- a. The method ensures that adjustments are always within a rational range, preventing overvaluation or undervaluation based on market availability.
- b. The system dynamically updates valuations in real-time as market data changes, providing accurate and current vehicle appraisals.

CLAIMS

1. A method for calculating a Scarcity Factor (SF) to adjust vehicle prices, comprising:
 - a. Determining an anticipated price based on a slope and intercept method.
 - b. Calculating the SF based on the availability of comparable vehicles within a specified radius, the standard deviation of their prices, and the actual radius utilized.
 - c. Applying a dollar adjustment to the anticipated price based on the calculated SF.
2. The method of claim 1, where the dollar adjustment is constrained to not exceed -10% of the anticipated price.
3. A system for implementing the method of claim 1, comprising:
 - a. A data processing unit to calculate the SF and apply the dollar adjustment.
 - b. A data storage unit to store market data, including comparable vehicle availability, prices, and standard deviations.
 - c. An interface for inputting vehicle data and displaying adjusted vehicle prices.

CONCLUSION

The described system and method provide an innovative approach to vehicle valuation, incorporating real-time market scarcity into price adjustments. This invention offers a significant improvement over traditional valuation methods, ensuring more accurate and market-reflective vehicle appraisals.