Vehicle Import Analyzer

Complete User Guide with Financial Calculations

Professional Vehicle Import Opportunity Analysis System

Business Intelligence Tool
for Vehicle Import Analysis

Version 1.0
July 15, 2025

Contents

1 What is Vehicle Import Analyzer?

The Vehicle Import Analyzer is a powerful business intelligence tool designed to help you identify profitable vehicle import opportunities between UK and Japan markets. It analyzes market data, calculates profit margins, assesses risks, and recommends the best investment opportunities.

1.1 What It Does For You

- ✓ **Finds Profitable Opportunities**: Automatically identifies vehicles with high profit potential

- ✓ **Calculates Financial Metrics**: Shows profit margins, ROI, and risk assessments

- ✓ **Optimizes Your Portfolio**: Suggests the best combination of vehicles within your budget

- ✓ **Provides Professional Reports**: Generates Excel reports for business planning

- ✓ **Saves Time**: Processes thousands of vehicle records in minutes

1.2 Key Benefits

- **No Technical Skills Required**: Simple drag-and-drop interface

- **Works with Your Data**: Accepts any Excel or CSV file format

- **Instant Analysis**: Get results in minutes, not hours

- **Risk Assessment**: Understand potential risks before investing

- **Portfolio Planning**: Optimize investments within your budget

2 System Requirements

2.1 Minimum Requirements

Component	Requirement
Operating System	Windows 10, macOS 10.15, or Linux Ubuntu 18.04+
Memory (RAM)	4GB minimum, 8GB recommended
Storage	2GB free disk space
Internet Browser	Chrome, Firefox, Safari, or Edge (latest versions)
Python	Version 3.8 or higher

2.2 Recommended Setup

- **Memory (RAM)**: 16GB for large datasets (10,000+ vehicles)

- **Storage**: 10GB for extensive historical data

- **Internet**: Stable connection for software updates

3   Getting Started

3.1   Step 1: Installation

1. **Download** the Vehicle Import Analyzer package

2. **Extract** the files to your desired location (e.g., Desktop/VehicleAnalyzer)

3. **Open Command Prompt/Terminal** in the extracted folder

4. **Run the setup command**:

```
python main.py --setup
```

3.2   Step 2: First-Time Setup

1. **Check System Status**: The setup will verify all components are working

2. **Create Sample Data** (optional): Generate template files to understand the format

3. **Initialize Database**: The system creates a local database for your data

3.3   Step 3: Start the System

1. **Run the application**:

```
python main.py
```

2. **Open your web browser** and go to: `http://localhost:5000`

3. **Verify the dashboard loads** - you should see the Vehicle Import Analyzer interface

4   Data Upload Requirements

The system requires two types of data to perform analysis:

4.1   UK Market Data (Vehicle Listings)

This should contain information about vehicles currently for sale in the UK market.

4.1.1   Required Information

- **Vehicle Details**: Make, model, year

- **Pricing**: Sale price in GBP (£)

- **Condition**: Mileage, general condition

- **Optional**: Location, seller details, features

4.1.2   Supported File Formats

- **Excel Files**: `.xlsx` or `.xls`

- **CSV Files**: `.csv`

- **Maximum Size**: 16MB per file

4.1.3   Sample UK Data Structure

Table 1: UK Market Data Example

Car Title	Price (£)	Mileage	Year
2019 Toyota Prius 1.8 Hybrid Excel CVT	18,500	32,000	2019
2018 Honda Civic 1.0 VTEC Turbo EX	16,200	28,500	2018
2021 Nissan Qashqai 1.3 DiG-T Tekna	22,800	15,000	2021

4.2   Japan Auction Data

This should contain information about vehicles sold at Japanese auctions.

4.2.1   Required Information

- **Vehicle Details**: Make, model, year

- **Auction Pricing**: Final auction price

- **Import Costs**: Shipping, duties, taxes (if available)

- **Condition**: Auction grade, mileage

4.2.2   Sample Japan Data Structure

Table 2: Japan Auction Data Example

Car Title	Year	Price	Mileage	Grade
2018 BMW 1 Series 118i	2018	$10,976	13,777 km	B
2019 Toyota Prius	2019	$8,500	25,000 km	A
2017 Honda Civic Type R	2017	$12,300	35,000 km	B

5   Understanding the Analysis

Once you've uploaded both UK and Japan data, the system performs comprehensive analysis to identify profitable opportunities.

5.1   Analysis Process

5.1.1   Step 1: Data Matching

The system matches vehicles between UK and Japan markets based on:

- **Exact matches**: Same make, model, and year

- **Similar vehicles**: Same make and similar year range

- **Category matches**: Vehicles in the same class (compact, luxury, etc.)

5.1.2   Step 2: Profitability Calculation

For each matched vehicle, the system calculates:
Gross Profit Calculation:

$$\text{Gross Profit} = \text{UK Average Selling Price} - \text{Total Japan Import Cost} \tag{1}$$

Example:

$$\text{UK Selling Price} = \pounds 18,500 \text{ (2019 Toyota Prius)} \tag{2}$$
$$\text{Japan Auction Price} = \pounds 12,000 \tag{3}$$
$$\text{Import Costs} = \pounds 4,200 \tag{4}$$
$$\text{Total Japan Cost} = \pounds 16,200 \tag{5}$$
$$\text{Gross Profit} = \pounds 18,500 - \pounds 16,200 = \pounds 2,300 \tag{6}$$

Profit Margin Calculation:

$$\text{Profit Margin} = \frac{\text{Gross Profit}}{\text{UK Selling Price}} \times 100 \tag{7}$$

Example:
$$\text{Profit Margin} = \frac{\pounds 2,300}{\pounds 18,500} \times 100 = 12.4\% \tag{8}$$

Return on Investment (ROI):

$$\text{ROI} = \frac{\text{Gross Profit}}{\text{Total Investment}} \times 100 \tag{9}$$

Example:
$$\text{ROI} = \frac{\pounds 2,300}{\pounds 16,200} \times 100 = 14.2\% \tag{10}$$

5.1.3   Step 3: Import Cost Breakdown

The system calculates comprehensive import costs:
Japan Auction Costs:

$$\text{Base Cost} = \text{Auction Price} + \text{Auction Fees} \tag{11}$$
$$\text{Auction Fees} = \text{Auction Price} \times 5\% \text{ (typically)} \tag{12}$$

Example:

$$\text{Auction Price} = \pounds 12,000 \tag{13}$$
$$\text{Auction Fees} = \pounds 12,000 \times 5\% = \pounds 600 \tag{14}$$
$$\text{Base Cost} = \pounds 12,000 + \pounds 600 = \pounds 12,600 \tag{15}$$

Shipping Costs:

$$\text{Shipping Cost} = \text{Base Cost} \times 15\% \ (\text{average}) \tag{16}$$

Example:
$$\text{Shipping Cost} = \pounds 12,600 \times 15\% = \pounds 1,890 \tag{17}$$

UK Import Duties and Taxes:

$$\text{Import Duty} = (\text{Auction Price} + \text{Shipping}) \times 10\% \tag{18}$$
$$\text{VAT} = (\text{Auction Price} + \text{Shipping} + \text{Import Duty}) \times 20\% \tag{19}$$

Example:

$$\text{Import Duty} = (\pounds 12,000 + \pounds 1,890) \times 10\% = \pounds 1,389 \tag{20}$$
$$\text{VAT} = (\pounds 12,000 + \pounds 1,890 + \pounds 1,389) \times 20\% = \pounds 3,056 \tag{21}$$

Total Landed Cost:

$$\text{Total Cost} = \text{Auction Price} + \text{Auction Fees} + \text{Shipping}$$
$$+ \text{Import Duty} + \text{VAT} + \text{Other Costs} \tag{22}$$

Example:

$$\pounds 12,000 + \pounds 600 + \pounds 1,890 + \pounds 1,389 + \pounds 3,056 + \pounds 500 = \pounds 19,435 \tag{23}$$

5.1.4 Step 4: Risk Assessment Calculations

Price Volatility Score:

$$\text{Price Volatility} = \frac{\text{Standard Deviation}}{\text{Average Price}} \times 100 \tag{24}$$

Example:

$$\text{UK Prices for Toyota Prius} : \pounds 17,500, \pounds 18,500, \pounds 19,200, \pounds 18,800, \pounds 17,900 \tag{25}$$
$$\text{Average Price} = \pounds 18,380 \tag{26}$$
$$\text{Standard Deviation} = \pounds 640 \tag{27}$$
$$\text{Price Volatility} = \frac{\pounds 640}{\pounds 18,380} \times 100 = 3.5\% \tag{28}$$

Risk Categories:

- Low Risk: $< 5\%$ volatility

- Medium Risk: $5 - 10\%$ volatility

- High Risk: $> 10\%$ volatility

Sample Size Confidence:

$$\text{Confidence Score} = \min\left(\frac{\text{Number of Data Points}}{10} \times 100, 100\right) \tag{29}$$

Example:

$$15 \text{ UK listings available} \tag{30}$$

$$\text{Confidence Score} = \min\left(\frac{15}{10} \times 100, 100\right) = 100\% \tag{31}$$

Confidence Levels:

- High Confidence: 10+ data points (100%)

- Medium Confidence: 5-9 data points (50-90%)

- Low Confidence: 1-4 data points (10-40%)

Age Risk Factor:

$$\text{Age Risk} = (\text{Current Year} - \text{Vehicle Year} - 3) \times 10\% \tag{32}$$

Example:

$$2025 - 2019 - 3 = 3 \text{ years beyond optimal} \tag{33}$$

$$\text{Age Risk} = 3 \times 10\% = 30\% \text{ additional risk} \tag{34}$$

Age Categories:

- New (0-3 years): 0% additional risk

- Recent (4-6 years): 10-30% additional risk

- Older (7+ years): 40%+ additional risk

Overall Risk Score:

$$\text{Risk Score} = \frac{\text{Price Volatility} + \text{Sample Risk} + \text{Age Risk} + \text{Market Risk}}{4} \tag{35}$$

Example:

$$\text{Price Volatility} : 3.5\% \tag{36}$$

$$\text{Sample Risk} : 0\% \text{ (high confidence)} \tag{37}$$

$$\text{Age Risk} : 30\% \tag{38}$$

$$\text{Market Risk} : 15\% \text{ (moderate demand)} \tag{39}$$

$$\text{Overall Risk} = \frac{3.5 + 0 + 30 + 15}{4} = 12.1\% \tag{40}$$

Risk Categories:

- Low Risk: 0-10%

- Medium Risk: 10-20%

- High Risk: 20%+

5.1.5   Step 5: Market Analysis Calculations

Market Share Calculation:

$$\text{Market Share} = \frac{\text{Brand Listings}}{\text{Total Listings}} \times 100 \tag{41}$$

Example:

$$\text{Toyota listings} : 45 \tag{42}$$
$$\text{Total listings} : 300 \tag{43}$$
$$\text{Market Share} = \frac{45}{300} \times 100 = 15\% \tag{44}$$

Demand Score Calculation:

$$\text{Demand Score} = (\text{Listing Density} \times 0.4) + (\text{Market Share} \times 0.3)$$
$$+ (\text{Price Stability} \times 0.3) \tag{45}$$

Example:

$$\text{Listing Density} : 45 \text{ vehicles (score: } 85/100) \tag{46}$$
$$\text{Market Share} : 15\% \text{ (score: } 75/100) \tag{47}$$
$$\text{Price Stability} : 3.5\% \text{ volatility (score: } 90/100) \tag{48}$$
$$\text{Demand Score} = (85 \times 0.4) + (75 \times 0.3) + (90 \times 0.3) = 83.5/100 \tag{49}$$

Estimated Sale Time:

$$\text{Sale Days} = \text{Base Days} + \text{Risk Adjustment} + \text{Price Adjustment}$$
$$+ \text{Demand Adjustment} \tag{50}$$

Example:

$$\text{Base Days} : 25 \text{ days (average)} \tag{51}$$
$$\text{Risk Adjustment} : +5 \text{ days for medium risk} \tag{52}$$
$$\text{Price Adjustment} : -3 \text{ days for competitive pricing} \tag{53}$$
$$\text{Demand Adjustment} : -7 \text{ days for high demand} \tag{54}$$
$$\text{Estimated Sale Time} = 25 + 5 - 3 - 7 = 20 \text{ days} \tag{55}$$

6   Portfolio Optimization

The portfolio optimizer helps you make the most of your investment budget by selecting the optimal combination of vehicles.

6.1   Optimization Algorithm

The system uses mathematical optimization considering:
Score-to-Cost Ratio:

$$\text{Efficiency Ratio} = \frac{\text{Final Score}}{\text{Investment Cost}} \times 1000 \tag{56}$$

Example Vehicle Comparisons:

$$\text{Toyota Prius}: \frac{87.3}{\pounds 16,200} \times 1000 = 5.39 \tag{57}$$

$$\text{Honda Civic}: \frac{82.1}{\pounds 14,800} \times 1000 = 5.55 \tag{58}$$

$$\text{BMW 1 Series}: \frac{79.4}{\pounds 19,500} \times 1000 = 4.07 \tag{59}$$

Ranking: Honda Civic (5.55) > Toyota Prius (5.39) > BMW 1 Series (4.07)
Risk Distribution Calculation:

$$\text{Portfolio Risk} = \sum_{i=1}^{n} (\text{Individual Risk}_i \times \text{Investment Weight}_i) \tag{60}$$

Example 3-Vehicle Portfolio:

$$\text{Vehicle A}: 10\% \text{ risk}, \pounds 20,000 \text{ investment } (25\% \text{ of portfolio}) \tag{61}$$

$$\text{Vehicle B}: 15\% \text{ risk}, \pounds 30,000 \text{ investment } (37.5\% \text{ of portfolio}) \tag{62}$$

$$\text{Vehicle C}: 8\% \text{ risk}, \pounds 30,000 \text{ investment } (37.5\% \text{ of portfolio}) \tag{63}$$

$$\text{Portfolio Risk} = (10\% \times 0.25) + (15\% \times 0.375) + (8\% \times 0.375) \tag{64}$$

$$= 2.5\% + 5.625\% + 3\% = 11.125\% \tag{65}$$

6.2   Portfolio Calculation Example

Sample £100,000 Portfolio Optimization:

Table 3: Selected Vehicles Portfolio

Vehicle	Investment	Expected Profit	ROI	Risk
Honda Civic (2018)	£14,800	£3,200	21.6%	12%
Toyota Prius (2019)	£16,200	£2,300	14.2%	12%
Nissan Qashqai (2020)	£18,500	£4,100	22.2%	8%
Mazda CX-5 (2018)	£17,800	£3,800	21.3%	14%
Subaru Forester (2019)	£21,200	£5,200	24.5%	9%
Honda CR-V (2017)	£11,500	£2,400	20.9%	18%
TOTALS	£100,000	£21,000	21.0%	12.2%

Portfolio Performance Metrics:

$$\text{Budget Utilization Rate} = \frac{\text{Total Investment}}{\text{Available Budget}} \times 100 \tag{66}$$

$$= \frac{\pounds 100,000}{\pounds 100,000} \times 100 = 100\% \tag{67}$$

$$\tag{68}$$

$$\text{Weighted Average ROI} = \sum_{i=1}^{n}(\text{Individual ROI}_i \times \text{Investment Weight}_i) \tag{69}$$

$$= (21.6\% \times 14.8\%) + (14.2\% \times 16.2\%) + \ldots = 21.0\% \tag{70}$$

$$\tag{71}$$

$$\text{Risk-Adjusted Return} = \frac{\text{Portfolio ROI}}{\text{Portfolio Risk}} \tag{72}$$

$$= \frac{21.0\%}{12.2\%} = 1.72 \text{ (Sharpe-like ratio)} \tag{73}$$

6.3   Optimization Strategies

6.3.1   Conservative Approach

Risk-Minimization Model:

$$\text{Objective : Minimize} \sum_{i=1}^{n}(\text{Risk Score}_i \times \text{Investment Weight}_i) \tag{74}$$

$$\text{Constraint : Expected ROI} \geq 15\% \tag{75}$$

Example Conservative Portfolio:

- Maximum individual vehicle risk: 10%

- Portfolio risk target: $< 8\%$

- Expected ROI range: 15-18%

- Time horizon: 90-120 days

6.3.2   Aggressive Approach

Return-Maximization Model:

$$\text{Objective : Maximize} \sum_{i=1}^{n}(\text{Expected Profit}_i \times \text{Success Probability}_i) \tag{76}$$

$$\text{Constraint : Portfolio Risk} \leq 20\% \tag{77}$$

6.3.3   Balanced Approach

Sharpe Ratio Optimization:

$$\text{Objective : Maximize} \frac{\text{Expected Return} - \text{Risk-Free Rate}}{\text{Portfolio Risk}} \tag{78}$$

Where Risk-Free Rate = 2% (UK base rate)
Target Sharpe Ratio: > 1.5

7   Performance Tracking and Analysis

7.1   Performance Tracking Calculations

Actual vs Predicted Performance:

$$\text{Tracking Ratio} = \frac{\text{Actual Profit}}{\text{Predicted Profit}} \tag{79}$$

Example:

$$\text{Predicted Profit} : \pounds 3,200 \text{ (Honda Civic)} \tag{80}$$

$$\text{Actual Profit} : \pounds 2,850 \tag{81}$$

$$\text{Tracking Ratio} = \frac{\pounds 2,850}{\pounds 3,200} = 0.89 \text{ (89\% accuracy)} \tag{82}$$

Target Tracking Ratio: > 0.80 (80% accuracy or better)
Time Performance:

$$\text{Sale Speed Ratio} = \frac{\text{Predicted Days}}{\text{Actual Days}} \tag{83}$$

Example:

$$\text{Predicted Sale Time} : 30 \text{ days} \tag{84}$$

$$\text{Actual Sale Time} : 25 \text{ days} \tag{85}$$

$$\text{Speed Ratio} = \frac{30}{25} = 1.20 \text{ (20\% faster than expected)} \tag{86}$$

Portfolio Health Score:

$$\text{Health Score} = (\text{Tracking Ratio} \times 0.5) + (\text{Speed Ratio} \times 0.3) + (\text{Success Rate} \times 0.2) \tag{87}$$

Example:

$$\text{Tracking Ratio} : 0.89 \tag{88}$$

$$\text{Speed Ratio} : 1.0 \text{ (capped for calculation)} \tag{89}$$

$$\text{Success Rate} : 0.75 \text{ (75\% of vehicles sold profitably)} \tag{90}$$

$$\text{Health Score} = (0.89 \times 0.5) + (1.0 \times 0.3) + (0.75 \times 0.2) = 0.895 \text{ (89.5\%)} \tag{91}$$

7.2   Reinvestment Strategy

Compound Growth Model:

$$\text{New Capital} = \text{Previous Capital} + (\text{Monthly Profit} \times \text{Reinvestment Rate}) \tag{92}$$

12-Month Projection Example:

$$\text{Starting Capital} : \pounds 100,000 \tag{93}$$
$$\text{Monthly ROI} : 1.75\% \ (21\% \text{ annually}) \tag{94}$$
$$\text{Reinvestment Rate} : 80\% \tag{95}$$
$$\tag{96}$$
$$\text{Month 1} : \pounds 100,000 + (\pounds 1,750 \times 0.8) = \pounds 101,400 \tag{97}$$
$$\text{Month 2} : \pounds 101,400 + (\pounds 1,775 \times 0.8) = \pounds 102,820 \tag{98}$$
$$\text{Month 3} : \pounds 102,820 + (\pounds 1,799 \times 0.8) = \pounds 104,259 \tag{99}$$
$$\vdots \tag{100}$$
$$\text{Month 12} : \pounds 122,584 \tag{101}$$
$$\tag{102}$$
$$\text{Total Growth} : 22.6\% \ (\text{including compounding effect}) \tag{103}$$
$$\text{Cash Withdrawn} : \pounds 4,200 \ (20\% \text{ of profits}) \tag{104}$$

7.3   Risk Management Calculations

Position Sizing Formula:

$$\text{Maximum Position Size} = \frac{\text{Total Capital} \times \text{Risk Tolerance}}{\text{Vehicle Risk Score}} \tag{105}$$

Example:

$$\text{Total Capital} : \pounds 100,000 \tag{106}$$
$$\text{Risk Tolerance} : 2\% \text{ per position} \tag{107}$$
$$\text{Vehicle Risk Score} : 12\% \tag{108}$$
$$\text{Max Position} = \frac{\pounds 100,000 \times 2\%}{12\%} = \pounds 16,667 \tag{109}$$

This means don't invest more than £16,667 in this specific vehicle.
Diversification Requirements:
If two vehicles have correlation > 0.7, limit combined exposure to 15% of portfolio.
Example:

$$\text{Toyota Prius and Toyota Corolla correlation} : 0.8 \tag{110}$$
$$\text{Combined maximum allocation} : \pounds 15,000 \ (15\% \text{ of } \pounds 100\text{k portfolio}) \tag{111}$$

8   Dashboard Usage and Features

8.1   Main Dashboard Sections

8.1.1   Key Metrics Cards

Located at the top of the dashboard, these show:

- **Total Opportunities**: Number of profitable vehicles found

- **Average Profit Margin**: Expected profit percentage

- **Best ROI**: Highest return on investment opportunity

- **Total Profit Potential**: Combined profit from all opportunities

8.1.2   Upload Panel

Central area for uploading your data files:

- **UK Data Upload**: Drag and drop area for UK market data

- **Japan Data Upload**: Drag and drop area for Japan auction data

- **Analysis Button**: Runs the profitability analysis

- **Status Indicators**: Shows current data status and progress

8.1.3   Charts and Visualizations

Profitability by Make Chart:

- Shows average profit margins for each vehicle manufacturer

- Helps identify which brands are most profitable

- Interactive bars - click to see details

Risk vs Reward Matrix:

- Scatter plot showing risk level vs potential return

- Each dot represents a vehicle opportunity

- Upper left quadrant shows low risk, high reward opportunities

Market Trends Comparison:

- Compares UK market prices vs Japan landed costs

- Shows price gaps that indicate profit opportunities

- Updated based on your actual data

9   Export and Reporting

9.1   Export Options

9.1.1   Excel Comprehensive Report

Contents:

- **Analysis Results Sheet**: Complete dataset with all metrics

- **Summary Sheet**: Key performance indicators and insights

- **Top 20 Opportunities**: Best investment opportunities detailed

- **Portfolio Recommendations**: Optimized investment suggestions

- **Charts and Graphs**: Visual representations of key data

Uses:

- Business planning and presentation

- Sharing with partners or investors

- Detailed financial analysis

- Record keeping and tracking

9.1.2 Sample Executive Summary with Financial Calculations

Table 4: Sample Executive Summary - Toyota Analysis

Metric	Value
Total Opportunities Analyzed	347 vehicle combinations
Profitable Opportunities	89 vehicles (25.6% success rate)
Average Profit Margin	18.3%
Best Opportunity ROI	34.7% (2019 Toyota Prius)
Financial Projections	
Market Opportunity Size	£18.69M annual opportunity
Top 20 Portfolio Value	£342,000 total investment
Expected Annual Profit	£67,400
Portfolio ROI	19.7%
Risk Metrics	
Weighted Portfolio Risk	13.2%
Success Rate	76% (historical validation)
Maximum Drawdown	8.5% (worst-case scenario)
Sharpe Ratio	1.34 (risk-adjusted return)

Market Opportunity Size Calculation:

$$\text{Annual Opportunity} = \text{Profitable Vehicles} \times \text{Average Investment} \times \text{Turnover Rate} \tag{112}$$

$$= 89 \times £17,500 \times 12 \text{ (monthly cycles)} \tag{113}$$

$$= £18.69\text{M annual opportunity} \tag{114}$$

9.1.3 Detailed Vehicle Analysis Example

2019 Toyota Prius Detailed Analysis:

Table 5: Cost Structure Breakdown

Cost Component	Amount (£)
Japan Auction Price	12,000
Auction Commission (5%)	600
Transportation to Port	250
Shipping to UK	1,200
UK Port Charges	180
HMRC Import Duty (10%)	1,389
VAT (20%)	3,056
Registration & Prep	520
TOTAL LANDED COST	**19,195**

UK Market Analysis:

$$\text{Data Points} : 12 \text{ similar vehicles} \tag{115}$$
$$\text{Price Range} : £17,200 - £22,500 \tag{116}$$
$$\text{Average Price} : £20,100 \tag{117}$$
$$\text{Median Price} : £19,850 \tag{118}$$
$$\text{Standard Deviation} : £1,450 \tag{119}$$
$$\text{Price Volatility} : 7.2\% \tag{120}$$

Profitability Scenarios:

Table 6: Profitability Analysis Scenarios

Scenario	Revenue (£)	Gross Profit (£)	Margin (%)
Conservative (Median)	19,850	655	3.3%
Average (Mean)	20,100	905	4.5%
Optimistic (75th percentile)	21,200	2,005	9.5%

10 Troubleshooting

10.1 Common Issues and Solutions

10.1.1 File Upload Problems

Issue: "File format not supported" error
Solution:

- Use only CSV (`.csv`) or Excel (`.xlsx`, `.xls`) files

- Check file size is under 16MB

- Ensure file contains actual data, not just headers

Issue: "No data found in file" error
Solution:

- Open your file and verify it contains vehicle data

- Check that price and vehicle information columns exist

- Remove any completely empty rows or columns

- Download templates to compare format

10.1.2 Analysis Problems

Issue: "No profitable opportunities found"
Solution:

- Verify you've uploaded both UK and Japan data

- Check that prices in both datasets are realistic

- Ensure vehicle makes/models are spelled consistently

- Try uploading more diverse vehicle data

Issue: Results seem unrealistic or too good
Solution:

- Verify your price data is accurate and current

- Check currency conversions are correct

- Review market conditions and external factors

- Cross-reference with industry benchmarks

10.1.3 Performance Issues

Issue: System running very slowly
Solution:

- Close other applications to free up memory

- Upload smaller data files (split large files)

- Clear old analysis results from the system

- Restart the application periodically

10.2   Getting Additional Help

10.2.1 Self-Help Resources

1. **Status Page**: Visit `/status` in your browser for system diagnostics

2. **Log Files**: Check the `logs` folder for detailed error information

3. **Sample Data**: Use provided templates to verify system functionality

4. **System Test**: Run the setup command to verify installation

10.2.2   Information to Provide When Seeking Help

- Exact error messages received

- Steps taken before the problem occurred

- Browser and operating system details

- Size and format of data files being used

- Screenshots of error conditions

11   Best Practices

11.1   Data Quality Guidelines

11.1.1   Preparing Your Data Files

UK Market Data Best Practices:

- Include recent data (within last 6 months) for accuracy

- Ensure prices are current market values, not asking prices

- Include variety of makes, models, and price ranges

- Verify mileage and year information is accurate

- Remove duplicate listings to avoid skewing results

  Japan Auction Data Best Practices:

- Use actual auction results, not estimated values

- Include total landed costs when available

- Ensure auction grades and conditions are documented

- Include variety of auction houses for broader perspective

- Verify currency conversions are current

11.2   Analysis Best Practices

11.2.1   Getting Reliable Results

- Upload sufficient data volume (minimum 50 vehicles each dataset)

- Include diverse vehicle types and price ranges

- Use recent data (within 3-6 months) for current market conditions

- Cross-reference results with industry knowledge

- Perform regular analysis updates as market conditions change

11.2.2   Risk Management

- Diversify vehicle selections to spread risk

- Start with smaller investments to test market response

- Monitor market conditions for changes

- Keep reserve funds for unexpected costs

- Document and learn from both successes and failures

11.3   Success Factors

11.3.1   Keys to Profitable Vehicle Importing

1. **Quality Data**: Accurate, current, comprehensive information

2. **Regular Analysis**: Frequent updates to capture market changes

3. **Diversified Approach**: Multiple vehicle types and sources

4. **Risk Management**: Conservative estimates and diversified investments

5. **Market Knowledge**: Combine analysis with industry expertise

6. **Continuous Learning**: Adapt strategies based on actual results

12   Mathematical Appendix

12.1   Key Formulas Summary

Table 7: Key Financial Formulas

Metric	Formula
Gross Profit	$\text{UK Price} - \text{Japan Total Cost}$
Profit Margin	$\frac{\text{Gross Profit}}{\text{UK Price}} \times 100$
ROI	$\frac{\text{Gross Profit}}{\text{Total Investment}} \times 100$
Price Volatility	$\frac{\text{Standard Deviation}}{\text{Average Price}} \times 100$
Portfolio Risk	$\sum_{i=1}^{n}(\text{Risk}_i \times \text{Weight}_i)$
Efficiency Ratio	$\frac{\text{Final Score}}{\text{Investment Cost}} \times 1000$
Sharpe Ratio	$\frac{\text{Return} - \text{Risk-Free Rate}}{\text{Portfolio Risk}}$
Position Size	$\frac{\text{Capital} \times \text{Risk Tolerance}}{\text{Vehicle Risk}}$

12.2   Import Cost Components

Table 8: Import Cost Calculation Components

Component	Calculation
Auction Fees	Auction Price $\times$ 5%
Shipping Cost	Base Cost $\times$ 15%
Import Duty	(Price + Shipping) $\times$ 10%
VAT	(Price + Shipping + Duty) $\times$ 20%
Total Landed Cost	$\sum$ All Components + Other Costs

13   Conclusion

The Vehicle Import Analyzer provides a comprehensive solution for analyzing vehicle import opportunities with:

- ✓ **Flexible Data Import**: Supports multiple file formats and column structures

- ✓ **Advanced Analysis**: Multi-factor profitability and risk assessment

- ✓ **Mathematical Rigor**: Comprehensive calculations and statistical analysis

- ✓ **Portfolio Optimization**: Budget-based investment recommendations

- ✓ **Professional Reporting**: Business-ready documentation and exports

13.1   Key Benefits

- • **No API Dependencies**: Pure manual import system

- • **Universal Compatibility**: Handles any CSV/Excel format

- • **Comprehensive Analysis**: 5-factor scoring system with mathematical foundation

- • **User-Friendly Interface**: Drag & drop file uploads

- • **Professional Output**: Excel reports and detailed calculations

13.2   Next Steps

1. **Setup**: Follow installation guide

2. **Import Data**: Upload your vehicle files

3. **Analyze**: Run profitability analysis with mathematical precision

4. **Optimize**: Use portfolio optimizer for maximum returns

5. **Export**: Generate reports for informed decision-making

For additional support or custom modifications, refer to the troubleshooting section or contact technical support with specific requirements.

Vehicle Import Analyzer - Professional Vehicle Import Analysis
Version 1.0 - July 15, 2025