

## Pricing Strategies and Revenue Analysis of HTL International (International Freight Forwarder) in Response to Volatile FCL (Full Container Load) Shipping Rates from China

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### ABSTRACT

HTL International faces dynamic variable rates attached to Full Container Load (FCL) shipments from China hubs. HTL has no prospective pricing strategy. To stay afloat in the tide of competition, HTL employs an integrated workforce through pricing policy, financial management, and risk disposition. If HTL considers the cost and risks forehand, it willn't just remain afloat and position itself on top in Indonesia's freight forwarding market. This study develops a financial strategy for HTL International to handle Chinese FCL shipping rate fluctuations. The study used internal and external data. There are findings as follows: dynamic pricing proved to be more flexible and profitable, cost-plus pricing provides stability but limits opportunity, 40FT container volumes have the most significant impact on revenue, the freight rate 40FT showed a stronger correlation with revenue compared to 20FT, and sensitivity analysis revealed that HTL's profitability is highly sensitive to changes in freight rates, variable costs, and container volumes. These findings support the idea that implementing a pricing strategy supported by volume optimization and operational efficiency allows HTL to navigate market volatility effectively. HTL must enhance its operational performance, reduce variable costs, and aim at 40FT container volumes to improve its financial situation. HTL International should implement hybrid pricing policies, maximize 40-foot container usage, and include sensitivity in financial planning, forecasting, predictive analytics, and revenue diversification.

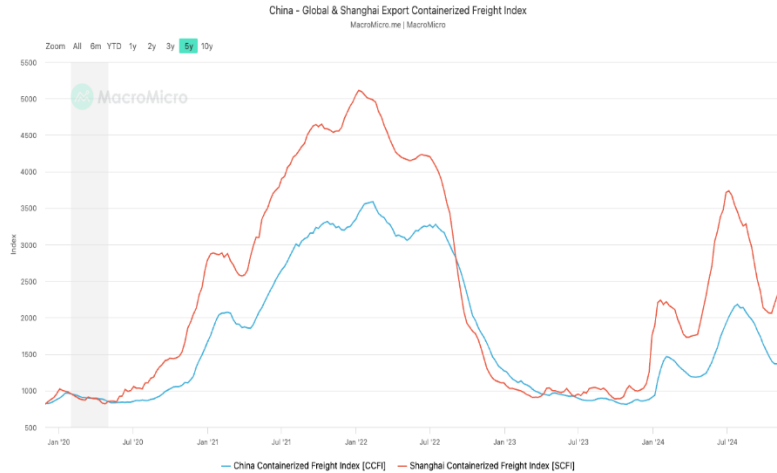
**Keywords:** Full Container Load (FCL), HTL International, Pricing Strategies, Revenue Analysis.

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### INTRODUCTION

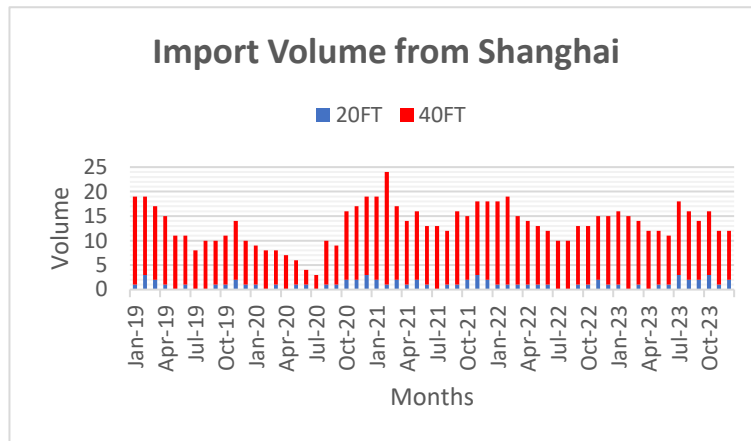
The logistics industry has a critical component: Full Container Load (FCL) shipping. FCL shipping exposes freight forwarders to rate volatility caused by global demand fluctuations, supply chain disruptions, and market-driven cost changes (Notteboom & Pallis, 2021). Such volatility affects freight forwarders' financial performance. Freight forwarders must be able to carefully manage pricing and revenue strategies to have stable financial conditions.

## Pricing Strategies And Revenue Analysis Of HTL International (International Freight Forwarder) In Response To Volatile FCL (Full Container Load) Shipping Rates From China



**Figure 1. Global and shanghai freight index**

HTL company faces challenges due to FCL shipping rate volatility. Starting from 2020, FCL rates, especially on major routes from China, experienced fluctuations. The volatility of FCL rates requires HTL to adopt strategic pricing models and revenue management practices. Dynamic, Cost-Plus, and Seasonal Strategies can help freight forwarders have the flexibility to adjust to rate fluctuations (Cahoon & Notteboom, 2019).



**Figure 2. Import volume from shanghai**

HTL needs the most efficient pricing models and revenue management to manage its finances and risks. Dynamic pricing and cost-plus pricing can provide freight forwarders the flexibility needed to adjust to rate fluctuations, protecting revenue streams, and profit margins (Cahoon & Notteboom, 2019). HTL is financially responsible for the cargo in transit and faces further financial risks. This is why it is valuable for HTLs to use tools for managing risk.

HTL can establish a fixed rate agreement with a specific client, provide variable pricing contingent on market conditions, and deliver additional value-added services. Through strategic revenue management, HTL can mitigate its vulnerability to fluctuating FCL prices (Lam & Lai, 2018). HTL can respond a little bit quicker to changes in FCL rates and provide customers with

faster and more accurate data by using digital tools. HTL needs to adopt a pricing strategy, manage its currency risk, and be ready to take on operational flexibility. HTL needs to focus on growing earnings, minimizing costs, and actively managing exposure to risks.

A tariff decrease may pressure HTL to adjust its pricing model to remain competitive. HTL should use dynamic pricing to maintain profit margins and adapt to market changes. Data-driven insights help HTLs improve carrier relationships, container utilization, and pricing flexibility.

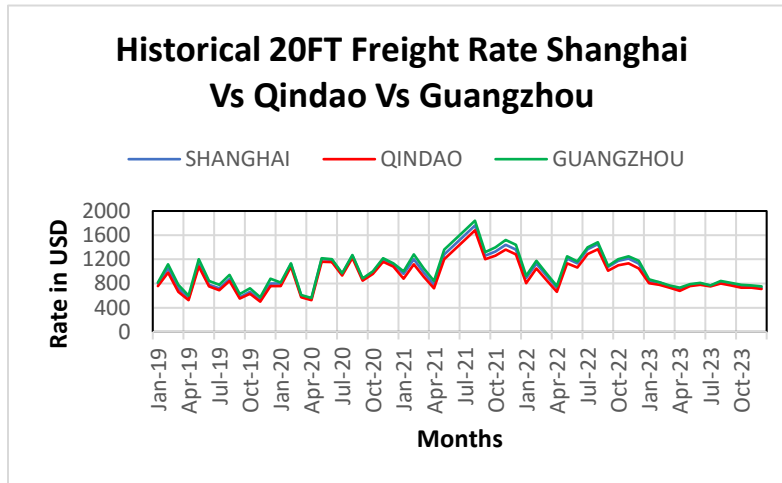


Figure 3. Historical 20ft freight rate shanghai vs qindao vs guangzhou

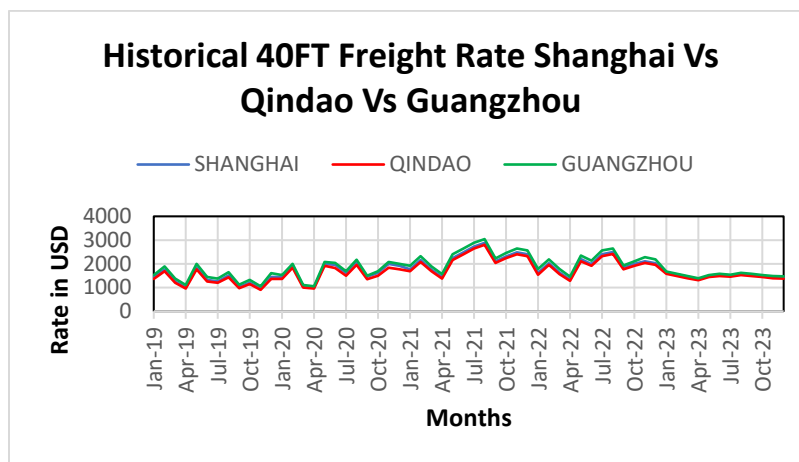


Figure 4. Historical 40ft freight rate shanghai vs qindao vs guangzhou

Figure 5 shows inconsistent revenue due to the volatility of ocean freight from China (Shanghai).

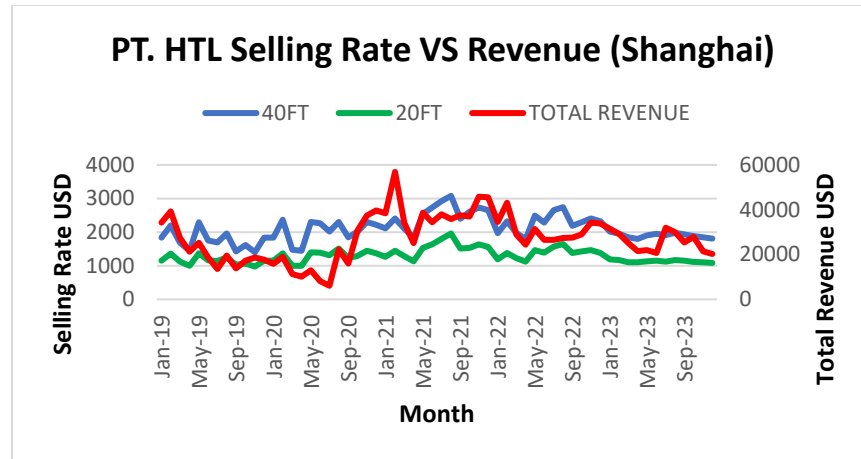


Figure 5. PT HTL selling rate vs revenue (shanghai)

With HTL’s current strategies in place, the company is highly likely to lose market share and profitability to competitors (Nguyen & Notteboom, 2020). HTL is also devoid of organized ways of dealing with risk.

Based on the above background, this study aims to develop and evaluate financial strategies tailored to HTL's needs, offering actionable insights in managing revenue and mitigating risks in the face of uncertain shipping rates. so the benefits in this study to provide practical recommendations for HTL International and other freight forwarders operating in volatile markets. These insights can guide companies in optimizing their financial strategies, enhancing operational efficiency, and ensuring customer satisfaction despite unpredictable fluctuations in FCL rates. Additionally, this study contributes to the existing body of knowledge on freight forwarding by exploring the integration of technology-driven solutions, such as digital platforms and predictive analytics, to improve pricing strategies and risk management.

## RESEARCH METHOD

Researchers collected secondary data and used a quantitative approach. Researchers use internal data, such as historical freight rates, revenue records, and operational cost data from 2019-2023. Researchers use external data from industry reports. Quantitative techniques are employed to process and interpret the historical data. The procedure consists of four interrelated analyses: the Determination of Pricing Objectives, the Cost-Volume-Profit (CVP) Analysis, the Revenue and Profitability Analysis, and the Regression Analysis.

### Analysis of Volatility Against Historical FCL Rate

The analysis considers the effect of historical 40FT and 20FT rates per container from 2019 to 2023. This analysis uses the CV to estimate rate volatility:

$$CV = \frac{\text{Standard Deviation of FCL Rates}}{\text{Mean of FCL Rate}}$$

### **Observing the Effect of Rate Volatility on Profitability**

When the FCL rates are low, consistent, and lower than the range in which old margins are, compare the old margins with the current ones. This assists in establishing the extent to which rate volatility influences HTL's ability to remain profitable.

### **Pricing Strategy Evaluation**

This step will consider cost-plus and dynamic pricing models to establish the market prices for HTL shares. Some of the actions that need to be taken are as follows:

- a. Dynamic Pricing Analysis: This analysis examines data from 2019 to 2023. The objective is to measure the effectiveness of this model in capitalizing on tariff increases.
- b. Cost-Plus Pricing Analysis: This analysis evaluates the consistency of revenue during predictable market conditions.
- c. Scenario Simulations: The revenue effects of the two pricing models are compared, focusing on crucial times.

### **Cost-Volume-Profit (CVP) Analysis**

CVP analysis establishes the relationship between shipping rates, container volumes, and HTL's profitability. Steps that need to be taken include:

- a. Profitability Assessment

Analyzing changes in transportation rates to determine their impact on HTL's financial performance.

Formula:

$$\text{BEP} = \frac{\text{Fixed Cost}}{\text{Selling Price per Unit} - \text{Variable Cost Per Unit}}$$

- b. Scenario-Based Profitability

Hypothetical scenarios are utilized to simulate the impact that major events would have on the financial system.

- c. Revenue and Profitability Analysis

This analysis investigates profitability and revenue trends. It can also measure the financial results of pricing strategies and shipping volumes.

### **Regression Analysis**

Regression analysis is applied to determine the degree of correlation between the primary variables and profitability. The steps that need to be taken include model construction, statistical validation, coefficient interpretation, and scenario-based insights.

### **Quantitative Analysis**

Quantitative analysis techniques should be employed to investigate historical data, make predictions, and establish critical connections. Trend analysis, correlation analysis, and regression analysis were utilized. Interpreting analysis results is the final step. Actionable insights can be

obtained, including measuring the effectiveness of pricing strategies and observing areas to improve risk mitigation and operations.

## RESULTS AND DISCUSSION

### Rate Volatility Impact HTL Revenue Stability

The following is a summary table of standard deviations and variances to highlight the level of volatility for 40FT and 20FT container freight rates (see Table 1).

**Table 1. Variance and standard deviation for 20ft and 40ft container freight rates**

Year	Summary					
	$\mu$		Variance		Standar Deviation	
	20FT	40FT	20FT	40FT	20FT	40FT
2019	0	0	71625,0	167666,7	USD 268	USD 409
2020	13	27	98018,1	246388,9	USD 313	USD 496
2021	-6	-12	80635,1	208939,4	USD 284	USD 457
2022	-5	0	57746,3	167789,4	USD 240	USD 410
2023	-10	-19	1617,8	4912,9	USD 40	USD 70

The standard deviation for 40FT containers is consistently higher than for 20FT containers. For example, the standard deviation for a 40FT container is USD 496 and USD 457 in 2020 and 2021. The standard deviation for a 20FT container in 2020 and 2021 is USD 313 and USD 284. In 2023, the standard deviation has decreased rapidly.

**Table 2. Coefficient correlation r**

Year	Coefficient Correlation <i>r</i>			
	20ft	Remark	40FT	Remark
2019	0.4817	Positive Correlation	0.656	Positive Correlation
2020	0.3022	Positive Correlation	0.282	Positive Correlation
2021	0.1147	Positive Correlation	0.224	Positive Correlation
2022	-0.1089	Negative Correlation	0.501	Positive Correlation
2023	0.8099	Positive Correlation	-0.153	Negative Correlation

Table 2 shows the relationship between HTL revenue and freight rates. A positive correlation was found between revenue and freight rates. For example:

- In 2019, a positive correlation coefficient indicates that higher freight rates positively contributed to revenue.
- In 2020, a positive correlation indicates higher rates of supported revenue during volatile periods.
- In 2022 and 2023, the correlation became less consistent. A negative correlation was discovered for 40-foot containers in the year 2023. There is a positive correlation for containers that are 20 feet in length.

The increase in freight rates is in line with revenue growth. Excessive volatility can cause instability. Freight rate fluctuations affect the revenue trend from 2019 to 2023. The fancy line

on the chart shows the 40FT freight rate. Market demand drove the line to its peak in Q4 2020 and Q1 2021. Revenue increased with the rate spike, as shown by the green line.

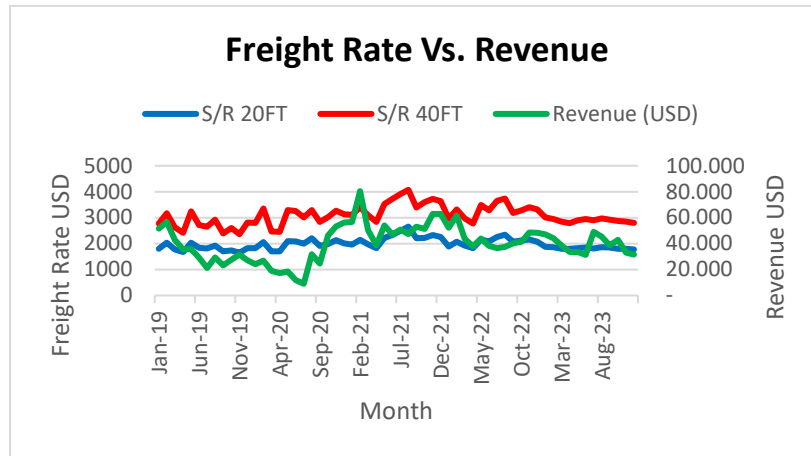


Figure 6. Freight rate vs. revenue

The revenue trajectory appears volatile in early 2020 and mid-2022. The blue line denoting the 20FT freight rate exhibited relative stability throughout the period. The 20FT freight rate provides a modest but consistent revenue contribution. 40FT containers are more vulnerable to market fluctuations and rate volatility. The analysis demonstrates that rate volatility directly impacts revenue stability, which shows increased sensitivity to fluctuations.

**Overview of Pricing Strategy Results**

Pricing affects income and margin through changing tariffs. Current pricing strategies include cost-plus and dynamic.

**Contribution Margin Comparison for Pricing Strategies**

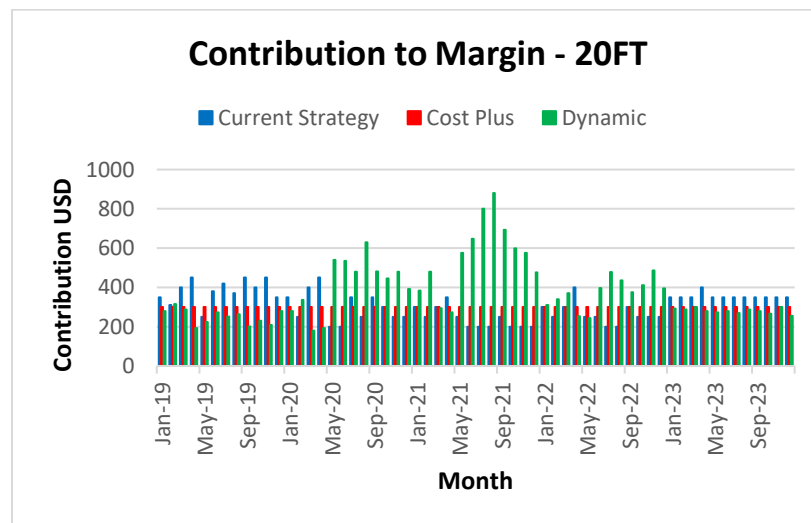
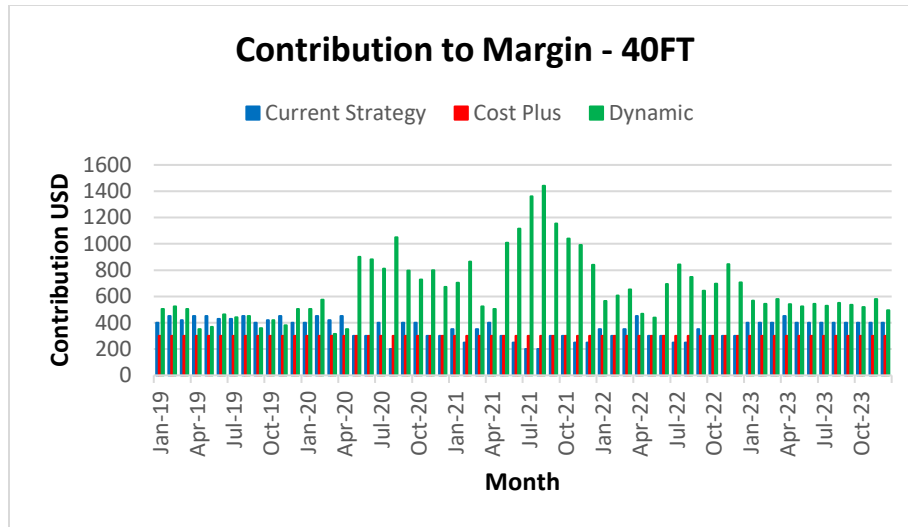


Figure 7. Contribution to margin – 20ft

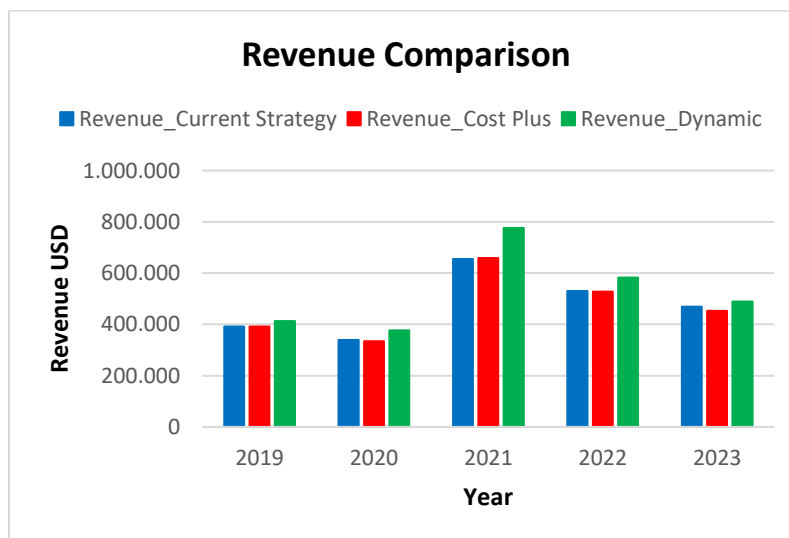


**Figure 8. Contribution to margin – 40ft**

The two charts show how the contribution margins differ across the three pricing models over time. The Dynamic Pricing Model generated higher contribution margins, especially during Q3 2021. With dynamic pricing, a 20FT container generated a contribution margin of around USD 700 per container. With cost-plus pricing, the contribution margin generated was less than USD 400. The limitations of the cost-plus pricing strategy can be seen during volatile markets. Since the markup approach limits its ability to take advantage of market dynamics, the contribution margin it generates is lower. This makes this strategy less competitive.

The dynamic pricing strategy on 40FT containers outperforms cost-plus pricing. With dynamic pricing, the contribution margin of a 40FT container reached USD 1,200 during Q3 2021, whereas with cost-plus pricing, it was below USD 800.

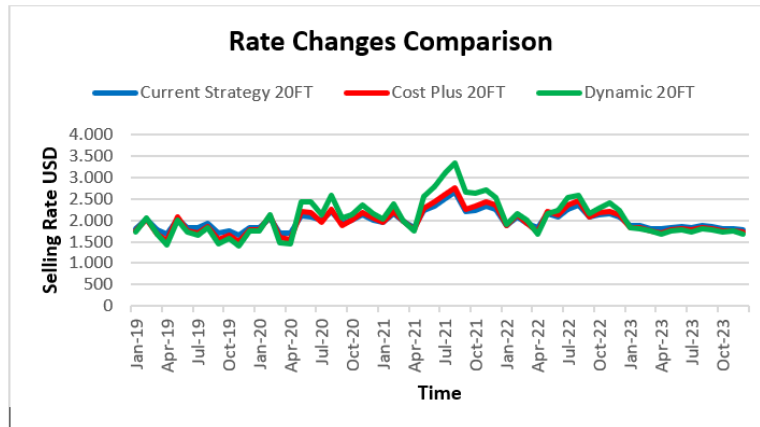
**Revenue Comparison by Pricing Mode**



**Figure 9. Revenue comparison by pricing mode**

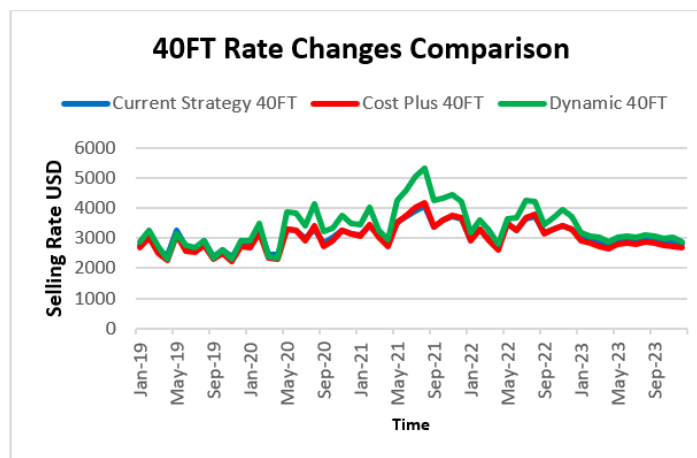
This chart shows the revenue trend with each pricing strategy from 2019 to 2023. The chart indicates that the peak revenue was attained in 2021. During that period, the revenue approached 800,000 USD. The Current Strategy and Cost-plus-pricing models exhibit relatively stable revenue patterns, with marked stagnation during elevated demand. In 2021, both strategies underperformed relative to dynamic pricing. The chart indicates that the peak revenue was attained in 2021.

**Rate Changes Comparison for Each Strategies**



**Figure 10. Rate changes comparison**

This chart shows the trend of sales tariffs for 20FT and 40FT containers with the three pricing strategies. Dynamic pricing shows fluctuations. This strategy can adapt to market changes. HTL can use this ability to take advantage of periods of high demand with high tariffs. In early 2020 and late 2022, dynamic pricing strategies maintained competitive rates. The cost-plus pricing strategy shows a relatively stable trajectory. This model has limitations in responding effectively to volatile market conditions. The current strategy still cannot outperform the capabilities of the dynamic pricing strategy.



**Figure 11. 40 ft rate changes comparison**

During periods of high demand, the dynamic pricing strategy consistently outperforms the other strategies. This strategy allows rates to reach 5000 USD per container during Q3 2021. The cost-plus strategy rates remain stable at around 4000 USD. The current strategy for 40FT containers fails to exploit periods of increased demand fully.

### Pricing Strategy Result Analysis

These results underline the advantages of a dynamic pricing strategy when facing fluctuating market conditions. Not only does it maximize contribution margin, but this strategy can also increase revenue. The flexibility of this strategy was seen during Q3 2021. Dynamic pricing also helped HTL maintain profitability and earn additional revenue. Cost-plus pricing is static in nature, so its effectiveness is limited. Dynamic pricing is the most effective model for maximizing profits in volatile industries.

### Cost-Volume-Profit (CVP) Analysis with Pricing Strategy

#### Breakeven Volume by Pricing Strategy

The graphs' analysis provides valuable insights into the impact of different pricing strategies on HTL's financial performance. These visualizations compare the minimum container volumes required to cover fixed costs under Dynamic Pricing, Cost Plus Pricing, and the Actual Volumes shipped from 2019 to 2023.

From the 20FT container chart, dynamic pricing can lower the breakeven threshold. This is shown in the green bars. In April 2020, the breakeven volume with a dynamic pricing strategy was around 10 containers. The breakeven volume with cost-plus pricing was 15 containers, as shown by the red bars. In that month, HTL's shipment volume reached around 12 containers. Its volume exceeded the breakeven requirement for a dynamic pricing strategy. This condition allowed HTL to achieve profitability despite the decrease in demand. However, with its higher and more rigid breakeven threshold, the cost-plus pricing model failed to reach profitability.

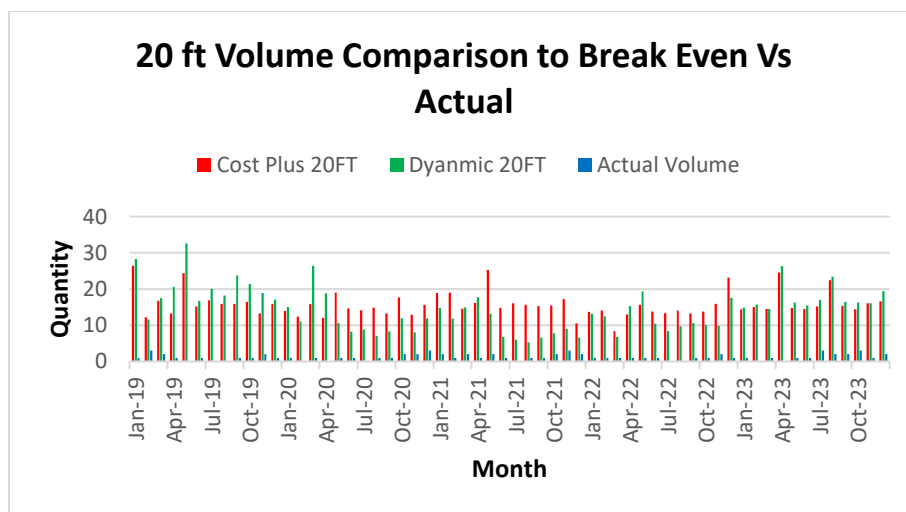
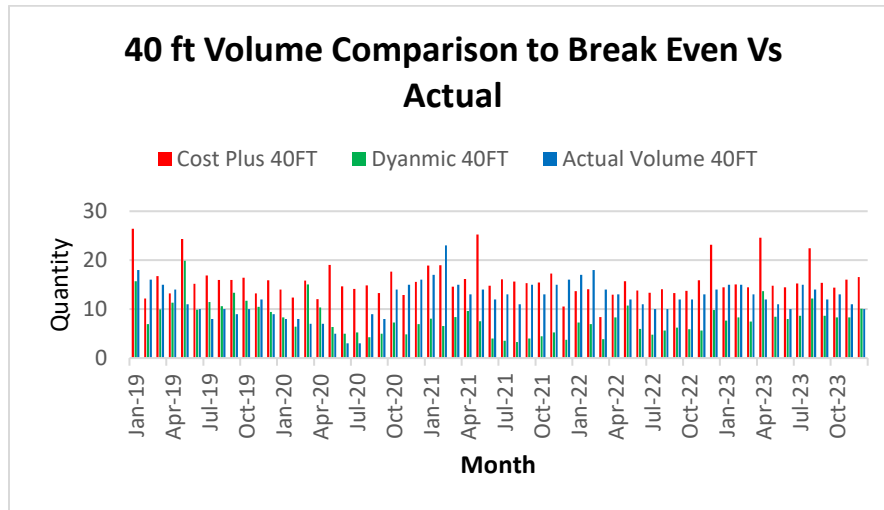


Figure 12. 20 ft volume comparison to break even vs actual

Actual volume often exceeds the breakeven threshold of dynamic pricing. However, it usually falls short of the breakeven threshold of cost-plus pricing. This pattern shows the weakness of cost-plus pricing in volatile markets.



**Figure 13. 40 ft volume comparison to break even vs actual**

Dynamic pricing outperforms cost-plus pricing by maintaining significantly lower breakeven volumes. The breakeven volume for dynamic pricing in October 2021 was about 10 containers. The rates for the cost-plus strategy remain consistent at approximately 4000 USD.

Dynamic pricing can adapt. In early 2021, this strategy helped HTL maintain its operations. The cost-plus pricing strategy has a static nature that makes it unable to reach the breakeven volume.

Strategy is essential to maintain shipment volumes above breakeven. Dynamic pricing’s ability to lower breakeven thresholds enables the company to capitalize on high-demand periods while minimizing losses during downturns. In contrast, the inflexibility of cost-plus pricing diminishes its efficacy in unstable market conditions, highlighting the necessity for more adaptable pricing strategies.

**Profit Sensivity Analysis**

Profit Sensitivity Analysis can elucidate HL International’s profitability determinants in a volatile market context and assess the effect of alterations in critical variables on the company’s profit. Profit Sensitivity Analysis assesses financial opportunities and risks.

**Key Assumptions and Baseline Data**

The data analyzed are financial data and basic assumptions, as shown in Table 3. The primary data highlights the following:

**Table 3. The key item table and profit & loss account**

Key Item	(\$)	Profit & Loss Account	(\$)
(S/R) Freight Rate	1450	Revenue	20350
Volume	11	Cost of Sales	10912
Variable Cost	992	Gross Profit	9438
Contribution to Margin	400	SG&A	4881
Fixed Cost	4881	Operating Profit	4557

The resulting revenue is \$20,350, with an Operating Profit of \$4,557. Table 4 shows the correlation between operating profit, freight rates, and container volume changes. It evaluates several scenarios.

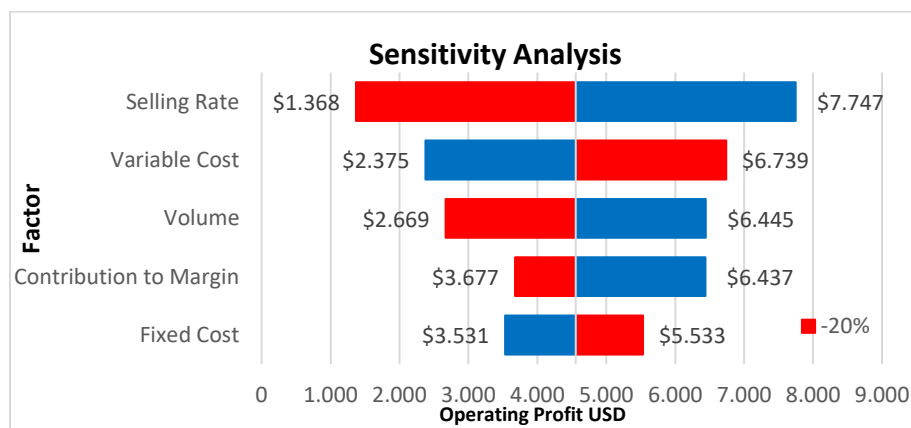
**Table 4. Relationship between operating profit and changes in container volume and freight rates**

Operating Profit (\$)		Container Volume (units)				
	4557	9	10	11	12	13
Freight Rates	1480	-587	-50	487	1024	1561
	1665	1041	1782	2522	3262	4003
	1850	2669	3613	4557	5501	6445
	2035	4297	5445	6592	7739	8887
	2220	5925	7276	8627	9978	11329

- d. A Low Freight Rate (e.g., \$1,480) combined with a low container volume (9 units) results in a negative operating profit (-\$587), emphasizing the vulnerability of HTL’s profitability during unfavorable market conditions.
- e. As the freight rate increases to \$2,220 and container volume reaches 13 units, operating profit surges to \$11,329, demonstrating the significant positive impact of higher rates and volumes.
- f. Increasing container volume freight rates can offset fixed costs.

**Tornado Chart Analysis**

Figure 15 provides an overview of the impact of changes in several factors on operating profit. The chart evaluates the effect of a 20% increase and a 20% decrease in key variables.



**Figure 14. Post sensitivity analysis**

- a. Selling Rate: The most influential factor, with profits ranging from \$1,368 (20% decrease) to \$7,747 (20% increase).
- b. Container Volume: Volume fluctuated by 20%, which significantly affected profit, which ranged between \$2,669 and \$6,445.
- c. Variable Cost: Variable costs increased by 20%, reducing profit to \$2,375. Conversely, a 20% reduction in variable costs could increase profits to \$6,739.
- d. Contribution to Margin: Changes in margin values can affect profit.
- e. Fixed Cost: Fixed Cost is the least sensitive. Therefore, their impact on profits is relatively tiny.

### Revenue and Profitability Analysis

This section examines the profitability and revenue trends for two strategies: dynamic pricing and cost-plus pricing. The data presented is from January 2019 to October 2023.

#### Revenue Throughout the Time

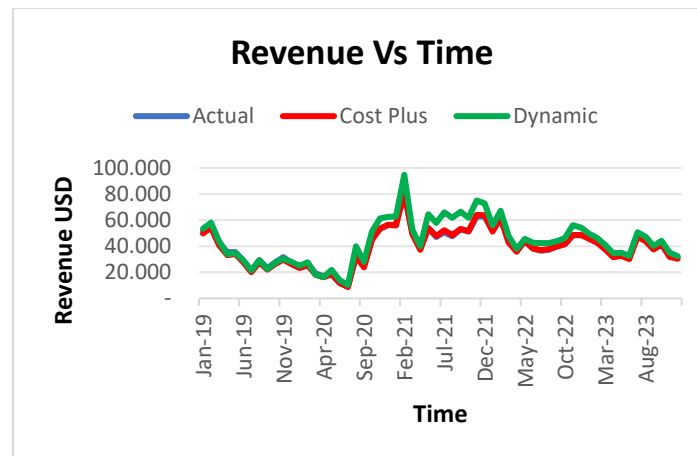


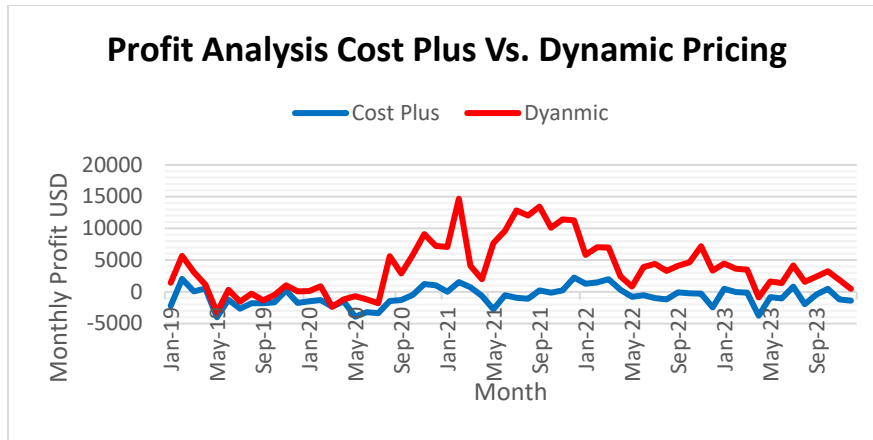
Figure 15. Revenue vs time

This graph explains the development of revenue in three scenarios: dynamic pricing, cost-plus pricing, and actual volume.

- a. The advantages of a dynamic pricing strategy were very visible in Q4 2020 and Q1 2021. Revenue increased rapidly, even exceeding cost-plus pricing and actual pricing.
- b. The cost-plus pricing strategy is relatively stable. Although the revenue generated is predictable, this strategy cannot adapt to price spikes.
- c. Actual volume revenue is lagging. This shows that dynamic pricing can increase sales and revenue.

#### Profitability Analysis: Cost-Plus vs. Dynamic Pricing

The cost-plus vs. Dynamic Pricing chart compares monthly profits under the two pricing strategies. The red line represents Dynamic Pricing, while the blue line reflects Cost-Plus Pricing.



**Figure 16. Profit analysis cost plus vs dynamic pricing**

- Dynamic pricing outperforms Cost-Plus Pricing during periods of market volatility. The dynamic pricing strategy generated profit benefits between Q4 2020 and Q1 2021. The profit jump was more than USD 15,000.
- Cost-plus pricing remains stagnant. Its profit level approaches break-even when demand is low, especially in Q2 2020.
- Both strategies face the challenge of maintaining profitability when demand is low. In that situation, dynamic pricing still provides a slight advantage.

The relationship between higher actual volume and profitability has been proven. When volume increased in 2021, the dynamic pricing strategy took advantage of the moment to gain greater profits. During low-volume periods, such as in early 2020, profitability declined rapidly.

**Regression Analysis: Interpretation of Results**

Regression analysis evaluates the influence of key variables on revenue. This analysis combines visual representation and numerical regression output.

**Table 5. Regression statistic**

Regression Statistics	
Multiple R	0,993952502
R Square	0,987941576
Adjusted R Square	0,986576472
Standard Error	1184,113262
Observations	60

The Multiple R-value of 0.9939 concludes that there is a positive correlation between the dependent variable and the independent variable. The R-Square value of 0.9879 means that the independent variables can explain around 98.79% of the revenue variation. The Adjusted R-Square value of 0.9866 takes into account the number of predictors in the model to ensure its reliability.

**Table 6. ANOVA regression and residual**

ANOVA					
	df	SS	MS	F	Significance F
Regression	6	6088398578	1014733096	723,7112686	5,46003E-49
Residual	53	74312583,55	1402124,218		
Total	59	6162711162			

The ANOVA results prove that the regression model is indeed robust. The F statistic value of 723.71 shows that the regression model is very significant. The F Significance value is very low and approaches zero, only 5.46E-49.

**Table 7. The regression output of each predictor variable**

	Coefficients	Standard Error	t Stat	P-value
Intercept	-27393,57503	4765,335089	-5,748509709	4,53644E-07
Freight Rate 20FT	3,589683663	3,89742472	0,921039897	0,361203156
Freight Rate 40FT	10,67143637	2,640660494	4,041199692	0,000172849
Contribution to Margin 20FT	10,53905788	6,670575078	1,579932428	0,120072621
Contribution to Margin 40FT	5,348037024	4,508583017	1,186190208	0,240837651
Volume 20FT	1360,537828	209,3818574	6,4978783	2,89503E-08
Volume 40FT	2121,84696	52,06848099	40,75108241	1,09318E-41

The 40FT freight rate has the highest coefficient. Its value is 10.67. This means that if the 40FT freight rate increases by \$ 1, revenue will increase by \$ 10.67. A P-value of 0.00017 indicates strong statistical relevance. The coefficient of 2121.8 and a P-value of 1.09E-41 indicate its substantial influence on revenue. So, it is important to maintain the volume of 40FT containers.

Contribution to Margin 40FT has a positive coefficient of 5.34. However, this is not significant, with a P-value of 0.2408. The coefficient of 20FT Transportation Rate is lower, which is 3.58. The P-value is higher, which is 0.3612. These coefficients yield the following regression equation:

$$Y = \text{Intercept} + (3,589 \beta_1) + (10,67 \beta_2) + \dots + \beta_n X_n$$

This equation shows how each independent variable affects income. The statistical significance of 40FT freight rates and volumes implies that tactics should enhance both to optimize income. Figures 18 and 19 show the graphical interpretation of the regression analysis:

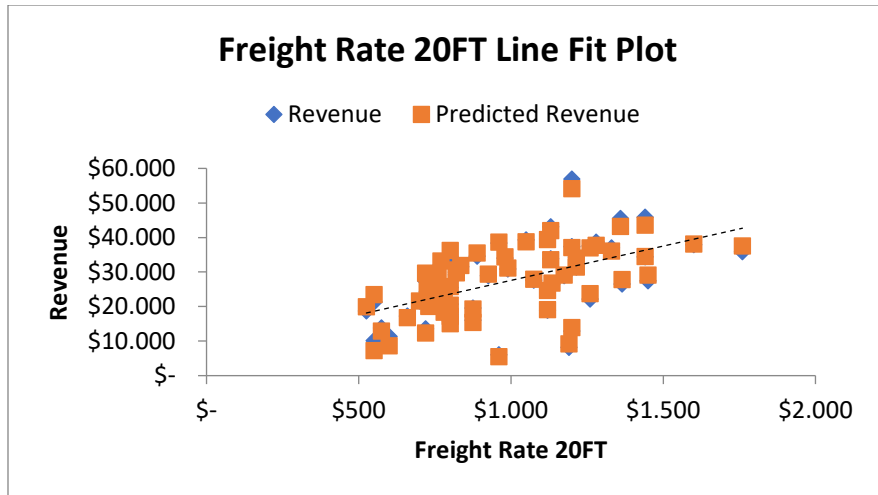


Figure 17. Freight rate 20 ft line fit plot

Figure 17 shows the fit plot of the 20FT freight rate line, and Figure 19 shows the relationship between 20FT freight rates and revenue. The scatter plot shows actual revenue data as blue dots and expected revenue as red boxes. The data points are evenly distributed around the trend line, indicating a mediocre fit.

Higher 20FT freight rates generally result in higher revenue. The spread of the data points shows variability; the previous regression results show that the coefficient of the 20FT Freight Rate is 3.58, and the P-value is 0.3613, indicating statistical insignificance. This suggests that while increasing 20FT rates contributes positively to revenue, the impact is inconsistent or as strong as other predictors like 40FT freight rates and volume.

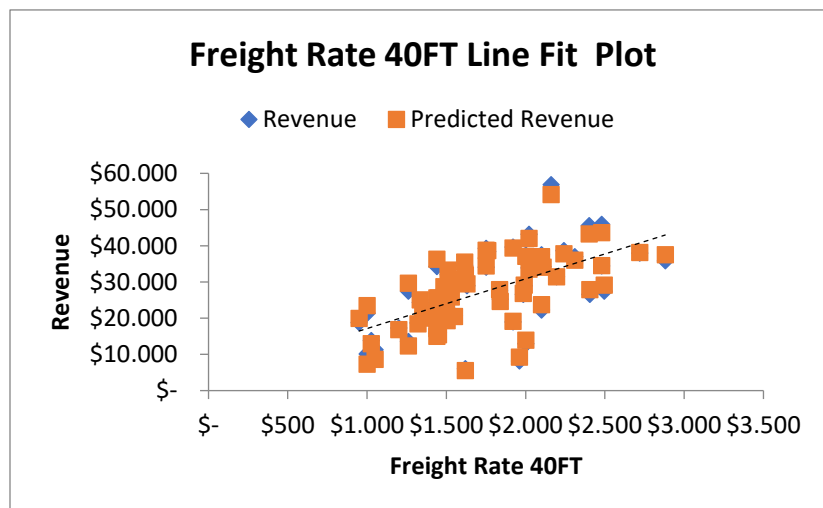


Figure 18. Freight rate 40 ft line fit plot

The Freight Rate 40FT Line Fit Plot reveals a stronger and more consistent positive relationship between 40FT freight rates and revenue. Compared to the 20FT plot, the steeper slope of the line indicates greater revenue sensitivity. The tighter distribution of data points

around the regression line indicates a more reliable correlation. An increase in the 40FT fare directly results in an increase in revenue. The 40FT fare shows a high level of statistical significance with a P-value close to zero.

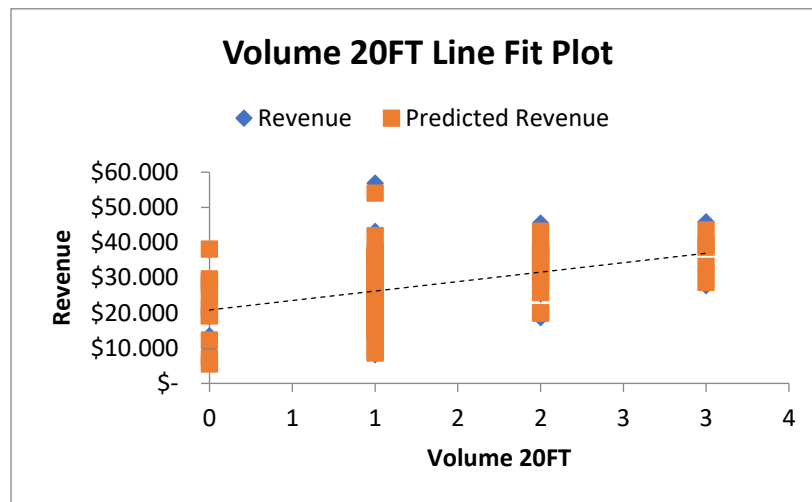


Figure 19. Volume 20 ft line fit plot

The 20FT volume line figure shows a weak income and 20FT container volume relationship. Many data points are scattered around the regression line since the contribution of 20FT containers to total income differs. The dispersed data imply that increasing 20FT volume does not significantly influence income. The coefficient of 20FT volume is positive but relatively minor, and the P-value indicates moderate significance. The plot suggests that reliance on 20FT containers may not be enough to generate significant revenue increases.

The 40FT Volume Line Fit graph correlates income and 40FT container volume. The data points and rigorous regression line clearly and consistently display more 40FT containers, which results in more income. The results showed that the coefficient of 40FT volume is much higher and highly significant. The line's steepness indicates the importance of 40FT containers in generating revenue. In order to maintain financial performance, it is critical to maintain 40FT volume above the breakeven level.

### Business Solution for Current Issue

#### Optimize Dynamic Pricing Strategies

Dynamic pricing significantly outperforms cost-plus pricing. Our recommendations are:

- a. Segmentation-Based Pricing: Inform your customers about the service's requirements regarding shipment, time, and category.
- b. Rate Flexibility During Low Demand: Consider adjusting the rates to draw in large volumes of containerized cargo during periods of low demand while still breaking even.

### **Focus on 40FT Container Volume Growth**

The regression and sensitivity analysis results suggest that 40FT containers impact sales performance the most. Suggestion actions are:

- a. Volume-Based Incentives: Offer discounts or incentives to customers who ship larger volumes, especially for 40FT containers.
- b. Capacity Planning: Increasing the capacity of 40FT containers will improve revenue, operational efficiency, and financial stability.

### **Utilize Data Analytics for Strategic Decision-Making**

This study shows data-driven decision-making benefits cost management, volume planning, and pricing. Suggestion actions are:

- a. Regular Performance Reviews: Conduct monthly or quarterly performance reviews to track revenue, profitability, and pricing effectiveness.
- b. Scenario Analysis: Use sensitivity analysis to model “what-if” scenarios for freight rates, volumes, and costs, enabling proactive decision-making in volatile markets.

### **Utilize Data Analytics for Changing Market Conditions**

The regression results and line fit plots indicate that pandemic disruptions and seasonal trends affect revenue performance. The proposed solutions are:

- a. Seasonal Planning: Optimize capacity and pricing strategies ahead of high-demand seasons.
- b. Market Diversification: Increase market diversification to include other shipping routes and markets, reducing reliance on a single port and mitigating risks.
- c. Contingency Plans: Make plans to deal with unexpected setbacks.

HTL International must adopt dynamic pricing, focus on 40FT container volumes, manage costs, and implement data analytics.

## **CONCLUSION**

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The profitability of HTL is prone to change not only due to changes in rates but also due to demand and supply. The turnaround in the first quarter of 2021 allowed the firm to achieve its targets on profitability that were set for 2020. A significant rise in revenue is noted after rate increases, as demonstrated by historical data from 2019 to 2023. From 2019 to 2023, there was an increase in income during periods of rate surges.

Dynamic prices that exploit the price swings allow HTL to enhance its profitability. Raising the transit dynamic pricing saves quite a lot. Cost plus pricing ensures a steadier but more inflexible income flow. The most suitable strategy for HTL would be to have a mixed strategy that entails dynamic pricing when the markets are volatile and cost-plus pricing when the markets are due to their stability.

The 40-foot containers consistently contributed approximately 70% of HTL’s FCL revenue, while 20-foot containers accounted for 30%. In 2021, the 40-foot container’s revenue grew more

substantially. HTL must prioritize strategies that enhance 40-foot container operations. The 40FT container volume reduces variable costs and increases operating efficiency.

The sensitivity analysis demonstrated that slight changes in freight rates, variable costs, or shipment volumes could significantly impact revenue and profit margins. This study demonstrates the importance of having an operational plan and a sound financial model.

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