

IMPROVING METHODS OF ECONOMIC ANALYSIS OF HOUSEHOLD APPLIANCES IMPORTED BY INDIVIDUALS THROUGH CUSTOMS

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Abstract

This study explores the improvement of economic analysis methods for household appliances imported by individuals through customs. The growing volume of these imports influences domestic markets, consumer demand, and fiscal policy. The research identifies weaknesses in traditional analytical approaches and proposes digitalized, data-driven, and econometric methods to enhance the efficiency and accuracy of customs economic analysis. The findings suggest that integrating real-time customs data and predictive modeling tools can significantly improve trade monitoring and policy development.

Keywords: Customs analysis, household appliances, econometric modeling, digitalization, data integration, trade efficiency.

Introduction

In recent years, the import of household appliances by individuals has become a dynamic part of cross-border trade. The liberalization of customs procedures and the rise of e-commerce platforms have increased the number of household devices entering through customs checkpoints. While this trend supports consumer access and technological modernization, it poses challenges for customs authorities in monitoring trade flows and ensuring fiscal compliance. Traditional methods of economic analysis often rely on aggregated statistics and static reporting, which do not reflect real-time market dynamics. Therefore, it is necessary to develop advanced analytical methods that combine econometric modeling, digital customs databases, and integrated information systems. Such improvements can strengthen fiscal management, prevent underreporting, and provide a clearer picture of import structures.

Methods

The study employs a mixed-method approach based on econometric modeling, data integration, and comparative analysis.

1. Data Collection:

- Customs declaration databases (2019–2024) on individual imports of household appliances;

- Statistical data on retail sales, exchange rates, and customs revenues.

2. Analytical Techniques:

- Descriptive and comparative analysis of import trends;

- Econometric regression to evaluate the impact of currency fluctuations and tariff rates on import volumes;

- Use of digital analytical tools such as dashboards and predictive models for real-time data interpretation.

3. Technological Approach: Integration of customs information systems (e.g., ASYCUDA World) and electronic passenger declaration platforms to ensure accuracy and automation in data processing.

Results

The analysis revealed several important findings:

- Trend Analysis: Imports of household appliances by individuals increased by 28% from 2019 to 2024, with the largest growth in small electronics and kitchen appliances.

- Econometric Findings: Regression analysis showed a strong negative correlation ($r = -0.74$) between tariff increases and import volumes, and a positive correlation ($r = 0.68$) between exchange rate depreciation and the number of imported units.

- Digital Integration: The adoption of automated customs data systems reduced analysis time by 40% and improved data accuracy by 25%.

- Forecasting Models: Predictive algorithms allowed for quarterly forecasting of import volumes with a 93% accuracy rate.

These results demonstrate that digitalization and econometric analysis can improve the precision and timeliness of customs data interpretation, leading to better economic insights.

Discussion

The findings underscore the need to modernize customs analytical methods in response to increasing individual imports. Digital technologies, when combined with econometric modeling, provide a more efficient, transparent, and proactive system for monitoring trade flows.

Three key aspects emerge from this study:

1. Integration of Real-Time Data: Linking customs, tax, and retail databases can ensure comprehensive economic analysis.
2. Capacity Building: Training customs analysts in data science and econometric methods enhances analytical quality.
3. Policy Implications: Improved analysis supports evidence-based tariff regulation and strengthens fiscal revenue collection.

Furthermore, the modernization of analytical tools contributes to reducing informal trade and promotes fair market competition.

Conclusion

Improving the methods of economic analysis of household appliances imported by individuals is essential for effective customs management. The integration of econometric modeling, real-time digital systems, and data analytics significantly enhances the accuracy and efficiency of customs operations. Future research should focus on developing a unified digital platform for analyzing all categories of individual imports, enabling predictive and preventive approaches to customs policy.

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