
**METHODOLOGICAL FOUNDATIONS FOR ASSESSING
THE EFFECTIVENESS OF BILATERAL TRADE
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ABSTRACT

The effectiveness of bilateral trade relations has become a critical issue in the context of globalization, regional integration, and increasing economic interdependence between countries. Traditional trade analysis based solely on trade volumes and balances is insufficient to capture the multidimensional nature of bilateral economic cooperation. This article aims to develop a comprehensive methodological framework for assessing the effectiveness of bilateral trade relations by integrating quantitative, structural, and institutional indicators. Using the IMRAD approach, the study systematizes theoretical foundations, proposes a composite evaluation model, and discusses its applicability for policy analysis. The results demonstrate that an integrated methodological approach allows for a more accurate assessment of trade performance, sustainability, and long-term economic impact.

Introduction

Bilateral trade relations represent one of the fundamental mechanisms through which countries integrate into the global economy. Over recent decades, the proliferation of bilateral and regional trade agreements, supply-chain fragmentation, and geopolitical shifts have significantly altered the structure and dynamics of international trade. As a result, evaluating the effectiveness of bilateral trade relations has become a key task for policymakers, researchers, and international organizations such as World Trade Organization and World Bank.

Most conventional assessments of bilateral trade focus on absolute indicators—export and import volumes, trade balances, and growth rates. While these metrics provide valuable information, they fail to reflect structural diversification, technological content, value-added creation, and institutional quality. Consequently, there is a growing demand for methodological frameworks that capture both quantitative and qualitative dimensions of bilateral trade effectiveness.

The relevance of this study lies in its attempt to bridge the gap between classical trade theory and applied policy analysis. By systematizing existing methodological approaches and proposing an integrated assessment model, this article contributes to a more nuanced understanding of bilateral trade performance.

The main objective of this study is to develop methodological foundations for assessing the effectiveness of bilateral trade relations based on a multidimensional analytical framework.

The specific research objectives are:

- to review theoretical and methodological approaches to bilateral trade assessment;
- to identify key indicators of trade effectiveness;
- to propose a composite methodological model;
- to discuss practical implications for economic policy.

Literature Review

Classical trade theories, including absolute and comparative advantage, emphasize specialization and efficiency gains from trade. These theories provide a conceptual basis for understanding why bilateral trade emerges but offer limited tools for evaluating its effectiveness beyond welfare gains.

Neoclassical models, particularly the Heckscher–Ohlin framework, focus on factor endowments and relative prices. Effectiveness in this context is often inferred from resource allocation efficiency rather than direct performance indicators.

The gravity model has become one of the most widely used empirical tools for analyzing bilateral trade flows. By incorporating economic size, distance, and institutional variables, gravity models enable researchers to estimate potential trade levels and identify trade gaps. However, gravity-based assessments mainly measure trade intensity rather than effectiveness in terms of structural quality or sustainability.

Recent literature emphasizes global value chains (GVCs), trade in value added, and technological sophistication. From this perspective, effective bilateral trade relations are those that enhance domestic value creation, promote diversification, and facilitate knowledge transfer.

Institutional economics highlights the role of trade agreements, regulatory harmonization, logistics performance, and trade facilitation. Effectiveness is linked not only to trade outcomes but also to the stability and predictability of bilateral trade regimes.

Despite extensive research, existing approaches remain fragmented. This underscores the need for an integrated methodological framework.

Methodology. The proposed methodological framework is based on the assumption that bilateral trade effectiveness is a multidimensional concept encompassing scale, structure, efficiency, and sustainability. Accordingly, the assessment model integrates four analytical dimensions:

1. Trade Scale and Dynamics
2. Structural Quality of Trade
3. Economic Efficiency
4. Institutional and Strategic Sustainability

Quantitative Indicators

- Bilateral trade turnover
- Export and import growth rates
- Trade balance and coverage ratio
- Trade intensity index

Structural Indicators

- Export diversification index
- Share of high-technology goods
- Intra-industry trade index
- Value-added share in exports

Efficiency Indicators

- Revealed comparative advantage (RCA)
- Terms of trade
- Logistics performance indicators
- Trade cost indicators

Institutional Indicators

- Depth of trade agreements
- Tariff and non-tariff barriers
- Customs efficiency
- Regulatory quality

Composite Trade Effectiveness Index (CTEI)

To integrate these indicators, a Composite Trade Effectiveness Index (CTEI) is proposed:

$$CTEI = \sum_{i=1}^n W_i * I_i$$

where:

- I_i - represents normalized indicators,
- W_i - denotes weights determined through expert assessment or statistical methods (e.g.,

PCA).

The methodology relies on official international databases, including trade statistics, value-added data, and institutional indices. Analytical tools include descriptive statistics, index construction, and comparative analysis.

Results. Application of the proposed framework allows for a differentiated evaluation of bilateral trade relations. Countries with similar trade volumes may exhibit significantly different effectiveness levels due to variations in trade structure, value added, and institutional quality.

The results demonstrate that:

- High trade volumes do not necessarily imply high effectiveness.
- Diversified and technology-intensive trade structures enhance long-term effectiveness.
- Institutional factors play a critical moderating role in trade outcomes.

The composite approach improves robustness by reducing reliance on single indicators and capturing trade performance from multiple perspectives.

Discussion. The findings confirm that assessing bilateral trade effectiveness requires moving beyond traditional metrics. The proposed methodological framework aligns with contemporary trade realities characterized by value chains, services trade, and regulatory integration.

From a policy perspective, the methodology enables:

- identification of structural weaknesses in bilateral trade;
- evaluation of trade agreement outcomes;
- formulation of targeted export diversification strategies.

However, limitations include data availability constraints and potential subjectivity in weighting indicators. Future research may refine the model through econometric validation and dynamic analysis.

Conclusion. This article develops a comprehensive methodological foundation for assessing the effectiveness of bilateral trade relations. By integrating quantitative, structural, efficiency, and institutional indicators into a composite framework, the study provides a more holistic evaluation tool than traditional approaches.

The proposed methodology is adaptable to different country contexts and can serve as a practical instrument for policymakers and researchers. Ultimately, effective bilateral trade should be understood not merely as growing trade volumes but as sustainable, diversified, and value-creating economic cooperation.

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