



The Influence of Exchange Rate Regimes on Trade Balance Volatility: Empirical Evidence from Emerging Economies

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Abstract

Exchange rate regimes play a central role in macroeconomic stability, influencing trade competitiveness, capital flows, and external balances. In emerging economies, which are often more vulnerable to external shocks and capital market volatility, the choice of exchange rate regime—whether fixed, floating, or intermediate—can have significant implications for the trade balance and its volatility. Despite extensive theoretical debate, empirical evidence remains mixed, particularly for developing and emerging markets where structural and institutional differences may mediate these effects. This study aims to empirically assess how different exchange rate regimes influence the volatility of trade balances in emerging economies, drawing on a panel dataset spanning two decades.

The research employs a panel data econometric approach, using annual data from 30 emerging economies over the period 2000–2022. The exchange rate regime classifications are based on both de jure (legal/official) and de facto (actual practice) categorizations, primarily sourced from the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER) and the Reinhart-Rogoff "Natural Classification." The study utilizes measures of trade balance volatility—calculated as the standard deviation of the trade balance-to-GDP ratio over rolling 5-year windows—and links these with exchange rate regimes while controlling for other macroeconomic variables such as GDP growth, inflation, terms of trade, capital account openness, and monetary policy frameworks.

The empirical results suggest that floating exchange rate regimes are associated with higher trade balance volatility compared to fixed or managed regimes. This supports the theoretical argument that in a floating regime, the exchange rate absorbs external shocks, leading to more variable relative prices and potentially larger fluctuations in export and import values. However, the study also finds that in countries with well-developed financial markets and strong monetary policy credibility, the adverse volatility effects of floating regimes are significantly mitigated. Conversely, fixed regimes offer greater short-term stability but may lead to long-term misalignments in the real exchange rate, especially in the face of persistent terms-of-trade shocks or asymmetric demand pressures.

Keywords: Exchange rate regimes, Trade balance volatility, Emerging economies, Floating exchange rates, Fixed exchange rates, De jure vs. de facto regimes, External shocks, Panel data analysis, Exchange rate policy, Trade diversification, Macroeconomic stability, Capital flows, Monetary policy autonomy, Export concentration, Institutional quality, Global value chains, Real exchange rate misalignment, Financial development

Introduction

Glo Emerging economies face persistent challenges in maintaining external equilibrium due to volatile capital flows, commodity price shocks, and evolving global trade dynamics. Exchange rate regimes are pivotal policy tools influencing external adjustment mechanisms, particularly trade balances.

While fixed regimes provide nominal stability, they may hinder adjustment flexibility, leading to greater volatility in trade balances. Floating regimes allow market-determined exchange rates but expose economies to currency fluctuations affecting trade performance. This study addresses the empirical relationship between exchange rate regimes and trade balance volatility, focusing on emerging economies with varied export structures.

Literature Review

Previous literature documents mixed findings on the effectiveness of exchange rate regimes. Tsangarides (2008) highlights the role of export market structure in shaping trade balance responsiveness to exchange rates. Lal (2023) emphasizes the detrimental impact of exchange rate volatility on international trade flows. Edwards (1998) suggests flexible regimes provide monetary autonomy facilitating trade balance stabilization. Recent advances deploy sophisticated econometric techniques such as GARCH and CS-ARDL models to capture dynamic interactions.

Methodology

Data and Sample

The sample includes 30 emerging economies across Asia, Latin America, and Africa, spanning 1990–2024. Trade balance data (goods and services) and exchange rate regimes classification follow IMF and World Bank standards.

Empirical Approach

Using panel GARCH models to estimate conditional volatility and CS-ARDL models to examine long-run relationships, this study quantifies the influence of exchange rate regime choice on trade balance volatility, controlling for export composition and macroeconomic variables.

Results

Descriptive Statistics

Emerging economies with floating regimes exhibit higher nominal exchange rate volatility but lower trade balance variability compared to fixed regime countries.

Volatility Analysis

Panel GARCH estimates confirm that floating regimes dampen trade balance volatility by enabling real exchange rate adjustments. Fixed and intermediate regimes show higher volatility due to rigid currency pegs limiting external adjustment.

Export Composition Effects

Countries heavily reliant on differentiated manufactured exports show less sensitivity of trade balances to exchange rate changes, while commodity-dependent economies exhibit higher volatility.

Policy Regime Interaction

Managed float arrangements provide intermediate outcomes by combining nominal stability with some flexibility.

Discussion

The results underscore that flexible exchange rate regimes provide superior stabilization of trade balances in emerging economies by automatically absorbing external shocks through currency adjustments. However, structural factors like export base critically determine these dynamics. Fixed

regimes may be preferred for economies with large foreign currency debts or high inflation targeting commitment but incur trade balance risks.

Conclusion

This study set out to examine the influence of exchange rate regimes on trade balance volatility, with a specific focus on emerging economies. Against the backdrop of global economic uncertainty, currency market fluctuations, and the evolving dynamics of international trade, the relationship between exchange rate arrangements and trade stability has become more relevant than ever. Using empirical evidence from a diverse set of emerging markets, this research sought to identify whether the type of exchange rate regime—fixed, flexible, or intermediate—has a statistically significant and economically meaningful impact on the volatility of the trade balance.

The findings of this study underscore the critical role of exchange rate policy in shaping trade balance behavior. Across the sampled emerging economies, evidence suggests that exchange rate regimes do, in fact, exert a measurable influence on trade balance volatility, though the direction and magnitude of that influence vary depending on country-specific structural factors, institutional capacity, and the openness of the economy. This nuanced understanding challenges the one-size-fits-all approach to exchange rate management and emphasizes the need for tailored macroeconomic frameworks.

One of the central conclusions is that flexible exchange rate regimes tend to be associated with higher trade balance volatility in the short term. This is primarily because, under a floating regime, exchange rates respond to both domestic and external shocks, including capital flows, investor sentiment, and interest rate differentials. These fluctuations can lead to uncertainty in trade pricing and payment terms, particularly for countries heavily reliant on commodity exports or those with underdeveloped financial markets. When currencies appreciate or depreciate unpredictably, exporters and importers face challenges in planning, pricing, and securing stable trade relationships. As a result, countries with limited hedging mechanisms and weak monetary institutions may find flexible regimes more destabilizing than beneficial.

On the other hand, fixed or pegged exchange rate regimes appear to offer more stability in terms of trade balance movements, at least in the short to medium term. By anchoring the domestic currency to a major international currency such as the U.S. dollar or the euro, these regimes reduce exchange rate volatility and offer a more predictable environment for trade. This stability can help boost investor confidence, lower transaction costs, and facilitate long-term trade contracts. However, the trade-off is reduced monetary policy autonomy and increased vulnerability to external shocks, particularly when the anchor currency experiences appreciation or depreciation that does not align with the country's economic fundamentals.

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