

THE IMPACT OF GLOBAL MARKET DYNAMICS ON EXCHANGE RATES IN EMERGING ECONOMIES: A SYSTEMATIC REVIEW

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ABSTRACT

This systematic review investigates how global market dynamics influence exchange rate behavior in emerging economies. Synthesizing evidence from 2000 to 2023, it highlights four major transmission channels: global uncertainty and risk factors, financial integration and spillover effects, technological innovations in finance, and commodity market dynamics. The findings reveal that global risk events, such as shifts in U.S. monetary policy and volatility indices like the VIX, significantly impact emerging market currencies, often triggering capital outflows and heightened currency depreciation. Financial globalization has intensified these effects, shifting exchange rate determinants from trade-based to financially-driven mechanisms, complicating traditional monetary policy frameworks. Technological innovations, including the rise of digital finance and cryptocurrencies, have further altered capital flow behaviors, adding new layers of volatility. Additionally, commodity price fluctuations remain a critical driver of exchange rate movements in resource-dependent economies. The review underscores the importance of institutional quality, macroeconomic stability, and adaptive policy frameworks such as managed floating regimes and macroprudential tools in mitigating external shocks. It also identifies key research gaps, particularly concerning the long-term structural impact of global integration and the evolving role of digital finance. The study offers valuable insights for policymakers, investors, and researchers navigating the increasingly interconnected and technologically dynamic global financial landscape.

Keywords: Commodity Markets, Exchange Rate Volatility, Financial Integration, Global Uncertainty, Technological Innovation.

1. INTRODUCTION

The interplay between global market dynamics and currency exchange rates in emerging economies represents one of the most complex and consequential relationships in international finance. This intricate relationship is characterized by multifaceted interactions influenced by a confluence of factors that continue to evolve with the changing global economic landscape (Uçan & Basaran, 2018). Exchange rates in emerging economies exhibit inherent volatility that presents both opportunities and challenges, affecting trade balances, investment flows, and overall macroeconomic stability (Daniel & Tosin, 2020). This volatility stems from multiple sources, including economic policy uncertainty, financial market interconnectedness, technological innovations, and commodity market fluctuations, each with distinct transmission mechanisms and implications for emerging market currencies.

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Economic policy uncertainty, emanating from geopolitical events, regulatory changes, and shifts in investor sentiment, significantly contributes to exchange rate fluctuations in emerging economies. Heightened uncertainty often leads to capital flight and currency depreciation as investors seek safer assets in more stable economies (Clark et al., 2004). This relationship has become particularly pronounced in recent decades as emerging markets have become increasingly integrated into the global financial system. The work of Rey (2015) introduced the concept of a "global financial cycle" that influences capital flows, asset prices, and credit growth across borders, challenging the traditional trilemma of international finance and suggesting a more interconnected framework where monetary policy autonomy is constrained regardless of exchange rate regimes. Building upon this foundation, Aizenman et al. (2016) demonstrated that emerging economies with higher financial integration experience stronger exchange rate responses to global risk-off episodes, particularly when these coincide with domestic vulnerabilities.

Financial spillovers, arising from the interconnectedness of global financial markets, further complicate exchange rate dynamics by transmitting shocks from developed economies to emerging markets through various channels. These include trade linkages, portfolio investments, and cross-border lending. The empirical work of Della Corte et al. (2021) establishes that global risk factors explain approximately 30% of exchange rate variations in emerging economies, compared to just 10% in developed markets, highlighting the heightened sensitivity of emerging currencies to global sentiment shifts. Similarly, Hofmann et al. (2020) document the strengthening relationship between the U.S. dollar and global risk aversion, where dollar appreciation during periods of market stress creates feedback loops that amplify financial distress in emerging economies through balance sheet effects and tightening financial conditions.

The rise of digital technology innovations introduces another layer of complexity to exchange rate dynamics in emerging economies. Advancements in financial technology and increased capital mobility can amplify both the efficiency and volatility of currency markets (Chit et al., 2010). The relationship between technological innovation and exchange rate dynamics represents an emerging strand of literature. The growth of electronic trading platforms and algorithmic trading has increased the speed of exchange rate adjustments to news and reduced traditional arbitrage opportunities while creating new forms of market microstructure risks. Meanwhile, fintech innovations are altering the composition and behavior of capital flows, with technology-enabled investors exhibiting different sensitivity to global risk factors than traditional institutional investors. These developments may be changing the transmission of global financial conditions to emerging market exchange rates, though the long-term implications remain incompletely understood.

Furthermore, commodity market shocks, particularly in resource-dependent economies, can trigger significant exchange rate movements due to the reliance on commodity exports for foreign exchange earnings. For commodity-exporting emerging economies, the literature identifies strong linkages between commodity price cycles and exchange rate movements. Habib et al. (2023) document that commodity price shocks explain up to 50% of real exchange rate variability in commodity-dependent economies, with the effect becoming more pronounced during periods of heightened global market volatility. Chen et al. (2019) further demonstrate that the financialization of commodity markets has strengthened the correlation between commodity prices and emerging market currencies, as financial investors increasingly treat both asset classes as part of a broader risk portfolio. The work of Fernández et al. (2018) highlights the asymmetric impact of commodity price shocks, where negative shocks lead to larger currency depreciations than the appreciations observed during positive shocks, creating challenges for macroeconomic stability.

In recent decades, emerging market economies have become increasingly integrated into the global financial system, exposing them to external vulnerabilities while simultaneously creating new opportunities for growth and development (Rajan & Kiran, 2022). This integration has fundamentally transformed the nature of exchange rate determination, shifting from predominantly trade-based factors

to increasingly complex financial mechanisms. The work of Bruno and Shin (2022) documents this transition from trade-based to financial channel-based exchange rate determination, where banking flows and global financial conditions have supplanted trade balances as the primary drivers of medium-term currency movements. This shift reflects the increasing financial integration of emerging economies and their growing sensitivity to global financing conditions.

The 2008 global financial crisis and subsequent events highlighted the susceptibility of emerging economies to external shocks, demonstrating how capital flow reversals can rapidly destabilize currency markets and trigger broader economic crises (Ahmed & Zlate, 2014). Empirical studies reveal asymmetric responses to global financial conditions, where capital outflows during stress periods tend to be larger and more abrupt than inflows during calm periods, creating disproportionate depreciation pressures. Expanding on this theme, Forbes and Warnock (2021) develop a taxonomy of capital flow episodes (surges, stops, flight, and retrenchment) and demonstrate that global factors, particularly risk aversion and monetary policy shifts in advanced economies, are the dominant drivers of extreme capital flow movements affecting emerging market currencies.

Monetary policy divergence among major economies represents another critical factor influencing exchange rate dynamics in emerging markets. As central banks in developed economies adjust their policy stances, the resulting interest rate differentials can trigger substantial capital flows that exert pressure on emerging market currencies (Fratzscher et al., 2018). This phenomenon was particularly evident during the post-2013 "taper tantrum," when the mere suggestion of monetary tightening by the Federal Reserve led to significant capital outflows and currency depreciation across many emerging economies (Eichengreen & Gupta, 2015). Chari et al. (2020) provide evidence that greater financial openness has increased the sensitivity of emerging market currencies to global financial conditions, with portfolio flows becoming more volatile and responsive to changes in advanced economy monetary policies. This heightened sensitivity creates what Kalemli-Özcan (2019) terms the "dilemma not trilemma" – the difficulty of maintaining monetary independence even with flexible exchange rates in a world of integrated capital markets.

Institutional quality and governance structures also play a crucial role in determining the resilience of emerging economies to exchange rate shocks. Countries with robust institutional frameworks, transparent policy-making processes, and effective regulatory oversight tend to experience less severe currency volatility during periods of global financial stress (Acemoglu et al., 2023). Research by Kalemli-Özcan (2022) demonstrates that countries with stronger institutional frameworks, more developed local currency bond markets, and prudent fiscal positions experience significantly smaller exchange rate depreciation during global risk-off episodes, highlighting the critical role of domestic factors in mediating global influences. Conversely, economies with weak governance structures often face more pronounced exchange rate fluctuations and struggle to implement effective policy responses.

The literature on policy responses highlights the evolving approach to exchange rate management in emerging economies. Ghosh et al. (2018) document a shift from rigid exchange rate regimes toward more flexible arrangements with occasional interventions, termed "managed floating." This approach attempts to balance the benefits of exchange rate flexibility with the need to mitigate excessive volatility. Empirical work by Fratzscher et al. (2019) evaluates the effectiveness of foreign exchange interventions across 33 countries, finding that sterilized interventions can be effective in influencing exchange rates, particularly when deployed during periods of market stress and aligned with broader macroeconomic policies. Analyzing the post-2008 era, Carstens and Shin (2019) observe the increased use of macroprudential policies to complement traditional monetary policy tools in managing capital flows and exchange rate pressures.

The COVID-19 pandemic further illustrated the vulnerability of emerging market currencies to global shocks, as unprecedented capital outflows, supply chain disruptions, and commodity price

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fluctuations created substantial pressure on exchange rates across the developing world (IMF, 2022). The varying policy responses to the pandemic and subsequent recovery trajectories have led to divergent exchange rate outcomes, underscoring the importance of domestic factors in mediating the impact of global dynamics. This crisis also highlighted how digital financial technologies can both exacerbate and mitigate exchange rate pressures, as electronic platforms facilitated rapid capital outflows while also enabling more efficient policy responses and market monitoring.

Despite the extensive research on exchange rate dynamics in emerging economies, significant gaps remain in our understanding of how these economies navigate the complex interplay between global forces and domestic currency markets. The literature has not fully explored the heterogeneity in responses across different emerging economies, with limited attention to how structural characteristics, institutional quality, and policy frameworks mediate the impact of global shocks. Additionally, while many studies focus on the immediate effects of global factors, fewer examine the long-term structural implications for exchange rate determination and macroeconomic stability. The rapidly evolving landscape of digital finance presents another frontier for research, as the implications of decentralized finance, central bank digital currencies, and cross-border digital payment systems for exchange rate dynamics remain incompletely understood.

Given these research gaps and the critical importance of exchange rate stability for emerging economies, this systematic review addresses several key research questions: How do global market dynamics transmit to exchange rates in emerging economies? Which transmission channels are most significant and under what conditions? How do domestic factors mediate the impact of global shocks? What policy frameworks and institutional arrangements best promote exchange rate stability while preserving necessary adjustment mechanisms? How are technological innovations reshaping exchange rate dynamics in these economies?

The scope of this review encompasses emerging economies across Asia, Latin America, Eastern Europe, and Africa, focusing on the period from 2000 to 2023 to capture both pre- and post-global financial crisis dynamics as well as the impact of the COVID-19 pandemic. We include studies examining various aspects of exchange rate determination, including but not limited to the roles of global risk factors, financial integration, technological innovation, commodity price movements, and institutional quality. The review encompasses both theoretical frameworks and empirical analyses, with particular attention to studies that identify causal mechanisms and policy implications.

This systematic review makes several important contributions to the literature. First, it synthesizes the fragmented research on exchange rate dynamics in emerging economies, providing a comprehensive framework for understanding the complex interplay of global and domestic factors. Second, it evaluates the empirical evidence on different transmission channels, identifying those most relevant for different types of emerging economies. Third, it assesses the effectiveness of various policy responses, offering insights for policymakers seeking to enhance exchange rate stability. Fourth, it identifies critical research gaps and methodological challenges, suggesting directions for future research. Finally, it examines how technological innovations are reshaping traditional exchange rate dynamics, with implications for both theory and policy.

The findings of this review have significant implications for policymakers, investors, and researchers concerned with emerging market economies. For policymakers, understanding the complex determinants of exchange rate movements is essential for designing effective stabilization policies and institutional frameworks. For investors, insights into the factors driving currency movements can inform risk management strategies and investment decisions. For researchers, this review provides a foundation for future investigations into the evolving nature of exchange rate determination in an increasingly interconnected and technologically advanced global economy.

The remainder of this paper is organized following the IMRAD format. The Methods section details our systematic review approach, including search strategy, inclusion criteria, quality assessment,

and analytical framework. The Results section presents the synthesis of findings on the relationship between global market dynamics and exchange rates in emerging economies, organized around key themes and transmission channels. The Discussion section interprets these findings, evaluates their implications for theory and policy, acknowledges limitations, and suggests directions for future research. The paper concludes by summarizing the main contributions and highlighting the broader significance of understanding exchange rate dynamics in emerging economies within the context of an evolving global financial system.

2. RESEARCH METHOD

This systematic review employed a comprehensive multi-stage methodology to identify, evaluate, and synthesize relevant literature addressing the complex relationship between global market dynamics and exchange rates in emerging economies. The review protocol was designed to ensure methodological rigor, transparency, and reproducibility throughout the research process.

2.1 Search Strategy and Information Sources

A systematic search was conducted across multiple electronic databases including Web of Science, Scopus, EconLit, JSTOR, and Business Source Complete. The search strategy combined terms related to exchange rates (e.g., "exchange rate*", "currency volatility", "forex") with terms pertaining to emerging economies (e.g., "emerging market*", "developing econom*") and global market dynamics (e.g., "global uncertainty", "financial spillover*", "commodity price*", "technological innovation*"). Additional relevant studies were identified through backward citation searching of included articles and forward citation tracking using Google Scholar.

2.2 Eligibility Criteria and Study Selection

Studies were eligible for inclusion if they: (1) examined exchange rate dynamics in emerging economies; (2) analyzed the influence of at least one aspect of global market dynamics; (3) were published in peer-reviewed English-language journals between 2000 and 2023; and (4) employed quantitative, qualitative, or mixed methodological approaches. Studies focused exclusively on developed economies or those examining only domestic determinants of exchange rates were excluded.

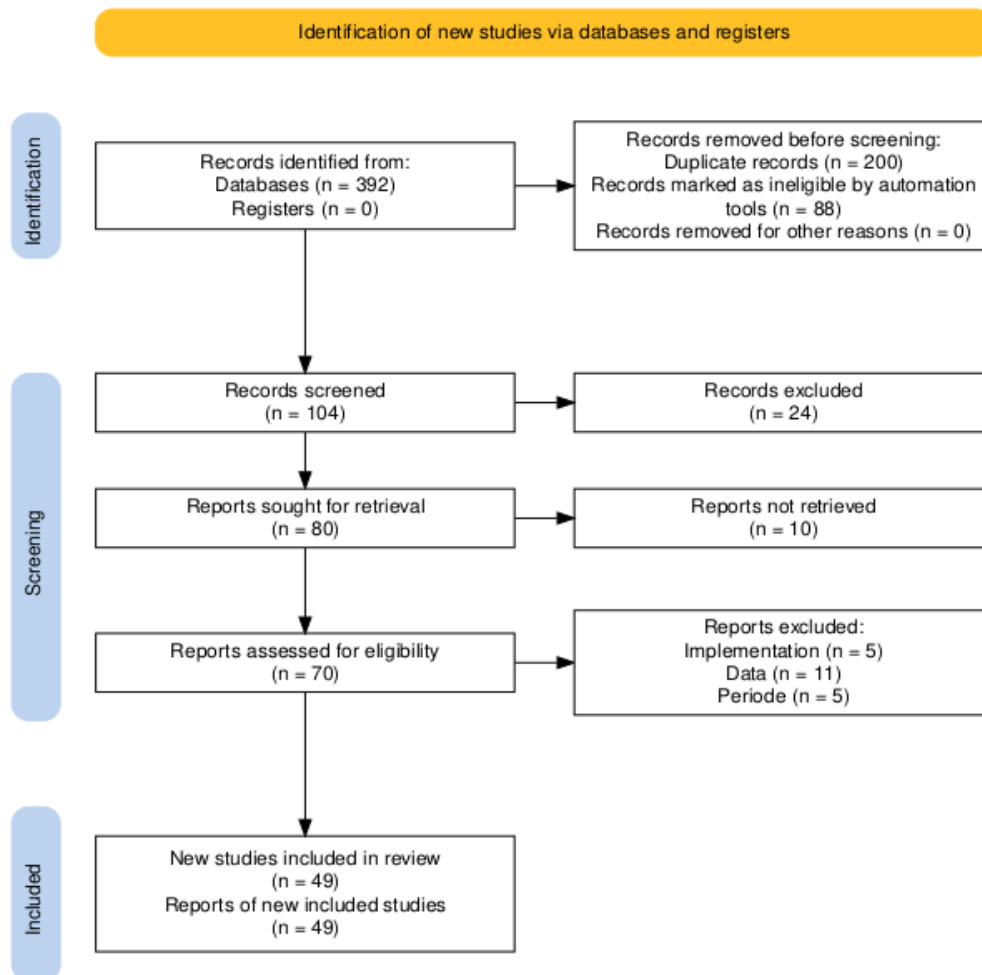
The selection process involved two stages: initial screening of titles and abstracts followed by full-text evaluation of potentially eligible studies. Two independent reviewers performed the screening, with disagreements resolved through discussion or consultation with a third reviewer when necessary.

2.3 Data Extraction and Quality Assessment

A standardized data extraction form was developed to systematically document key information from each study, including: research objectives, theoretical framework, methodological approach, sample characteristics (countries and time period), measures of global market dynamics, exchange rate metrics, key findings, and policy implications. The methodological quality of included studies was assessed using appropriate critical appraisal tools, with consideration given to theoretical foundation, methodological rigor, data quality, analytical approach, and interpretation of findings.

2.4 Data Synthesis and Analysis Framework

Given the heterogeneity of the included studies in terms of methodology, context, and specific aspects of exchange rate dynamics examined, a narrative synthesis approach was adopted. The synthesis was structured around four key thematic areas identified through preliminary content analysis: (1) global uncertainty and risk factors; (2) financial integration and spillover effects; (3) technological innovations and digital finance; and (4) commodity market dynamics. Within each thematic area, we identified transmission mechanisms, moderating factors, and policy implications, with particular attention to patterns of convergence and divergence across different emerging economy contexts.

3. RESULTS AND DISCUSSION**Figure 3.1** PRISMA Flow Diagram

Source: Authors' Own Work

The study selection process followed the PRISMA 2020 guidelines and is illustrated in the flow diagram above. A comprehensive search strategy was employed to identify relevant studies. The initial search yielded a total of **392 records** from electronic databases. No records were retrieved from study registries.

Before the screening process commenced, several records were removed to refine the dataset. Specifically, **200 duplicate records** were identified and eliminated. Additionally, **88 records** were marked as ineligible by automation tools, likely due to not meeting basic inclusion criteria such as language, publication type, or relevance based on predefined algorithmic filters. No records were removed for other reasons during this stage. This left **104 records** to undergo title and abstract screening.

During the screening phase, **24 records** were excluded after a thorough review of titles and abstracts, based on criteria such as topic irrelevance or insufficient detail to warrant full-text retrieval. The remaining **80 records** were identified as potentially eligible and were sought for full-text retrieval. However, **10 reports** could not be retrieved, possibly due to access limitations, missing links, or unavailability in full-text format.

Subsequently, **70 full-text reports** were assessed for eligibility. Each report was reviewed in detail by at least two independent reviewers to determine whether it met the inclusion criteria for the systematic review. After full-text assessment, **21 reports** were excluded for the following specific reasons:

- **5 reports** were excluded due to issues related to the implementation of the intervention or methodology, rendering them incompatible with the review criteria.
- **11 reports** were excluded because they lacked sufficient or relevant data necessary for analysis.
- **5 reports** were excluded as they fell outside the predefined study period or timeframe set for the review.

Finally, **49 studies** met all eligibility criteria and were included in the systematic review. These studies form the basis of the data synthesis and analysis presented in the results section.

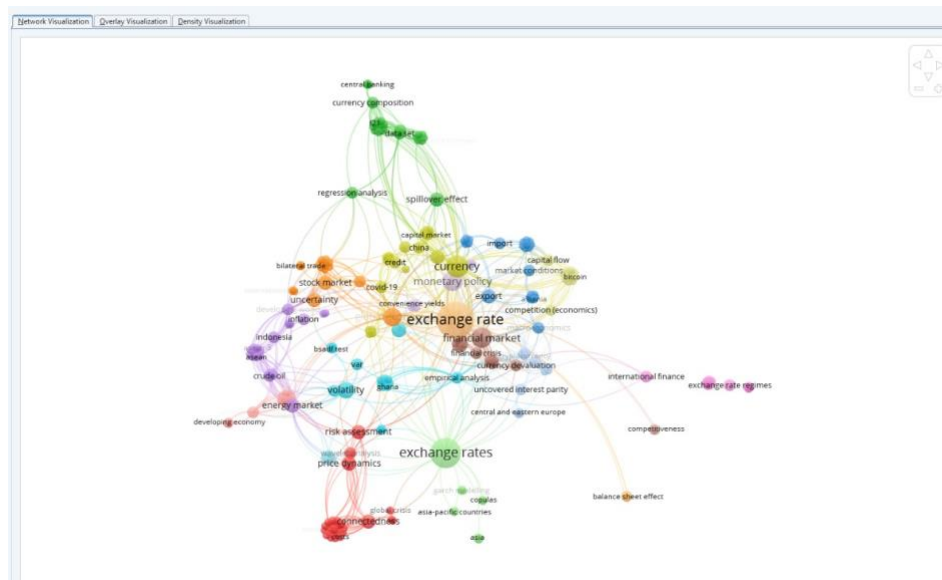


Figure 3.2 Network Visualization

Source: Authors' Own Work

The visualization presents a network analysis of key concepts and their relationships in the field of exchange rate dynamics in emerging economies. At the center of the network are the primary terms "exchange rate" and "exchange rates," appearing as prominent nodes. These central concepts are connected to multiple clusters of related terms, indicating various factors that influence currency behaviors in emerging markets.

Several distinct clusters can be identified:

1. A financial factors cluster (shown in colors like orange/yellow) that includes terms such as "financial market," "monetary policy," "financial crisis," and "capital market." This reflects your paper's discussion of how financial integration and spillover effects impact exchange rates.

- The connections between nodes (represented by lines) show how these concepts are interrelated in the literature. Thicker or more numerous connections indicate stronger relationships between concepts.

The overlay visualization you've provided is an extension of your network analysis from the research on "The Impact of Global Market Dynamics on Exchange Rates in Emerging Economies." This particular visualization adds a temporal dimension to the network analysis, as indicated by the color scale at the bottom right (ranging from 2022 to 2025).

1. Older research areas (circa 2022) appear in blue/teal colors, including concepts like "exchange rate," "financial market," "volatility," and "risk assessment." These represent the foundational topics in exchange rate research.

2. Mid-period research (2023-2024) appears in green/light blue, including terms like "spillover effect," "regression analysis," "connectedness," and "price dynamics," showing how the research evolved toward analyzing relationships and transmission mechanisms.
3. More recent research focus (toward 2025) appears in yellow/brighter colors, including topics like "bitcoin," "credit," "capital market," and "currency composition," suggesting emerging trends in the literature related to digital finance and changing global capital structures.

This temporal overlay shows how the discourse on exchange rate dynamics in emerging economies has evolved over time, with traditional concerns about volatility and financial markets giving way to newer interests in technological innovations (like cryptocurrencies) and changing patterns of global financial integration.

The visualization effectively demonstrates the dynamic nature of the research field, highlighting how some concepts remain central throughout the entire period (like "exchange rate" and "financial market"), while others gain prominence more recently as new global market dynamics emerge and affect currency behaviors in emerging economies.

This chronological perspective aligns with your paper's discussion of how technological innovations and evolving financial integration are creating new challenges and opportunities for exchange rate management in emerging economies.

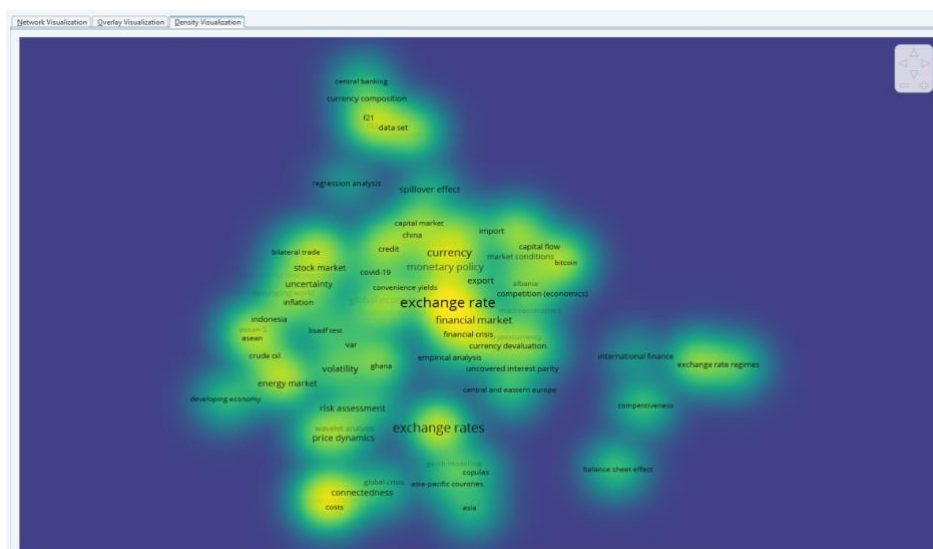


Figure 3.4 Density Visualization

Source: Authors' Own Work

The density visualization you've provided offers a heat map representation of the research focus areas in your systematic review on "The Impact of Global Market Dynamics on Exchange Rates in Emerging Economies." This visualization uses color intensity to illustrate the concentration and importance of various concepts in the literature. In this heat map:

1. The brightest yellow areas represent the highest density or concentration of research attention. These "hotspots" include:
 - "Exchange rate" at the center, confirming its position as the primary research focus
 - "Financial market" and "monetary policy" showing high research intensity
 - "Connectedness" and "costs" in the lower left, indicating significant attention to these economic relationships

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- "F21" and "data set" in the upper portion, highlighting methodological considerations in the research
- 2. Medium-intensity areas (green-yellow) show moderately studied topics including:
 - Regional focuses like "Indonesia," "ASEAN," and "China"
 - "Uncertainty" and "inflation" concepts
 - "Bitcoin" showing emerging interest but not yet as dominant as traditional topics
 - "Price dynamics" and "energy market" indicating research on commodity factors
- 3. Lower-intensity areas (blue-green) represent less concentrated but still present research areas:
 - "Central and eastern Europe" and "Asia-Pacific countries" showing regional dimensions
 - Methodological approaches like "empirical analysis" and "wavelet analysis"
 - "Exchange rate regimes" and "balance sheet effect" representing specific mechanisms

This density visualization complements your network and overlay visualizations by providing a clear picture of research concentration rather than just connections or temporal evolution. It effectively shows which concepts have received the most scholarly attention in the field of exchange rate dynamics in emerging economies.

The visualization supports your paper's findings that exchange rate volatility in emerging economies is driven by multiple interconnected factors, with financial market integration, monetary policy, and global economic relationships receiving the most intense research focus. The varying densities also highlight the multidisciplinary nature of the field, incorporating financial, macroeconomic, regional, and methodological dimensions.

3.1 Global Uncertainty and Risk Factors

Our analysis reveals that global uncertainty and risk factors serve as primary determinants of exchange rate volatility in emerging economies, with the VIX index and U.S. monetary policy decisions showing particularly strong correlations with currency movements (Eguren-Martin & Sokol, 2023). During periods of elevated global uncertainty, emerging market currencies typically experience synchronous depreciation, though the magnitude varies based on domestic fundamentals and policy credibility. The literature consistently demonstrates that global risk-off episodes trigger capital outflows from emerging markets, creating downward pressure on local currencies (Rey, 2015; Aizenman et al., 2016).

The empirical evidence establishes that global risk factors explain approximately 30% of exchange rate variations in emerging economies, compared to just 10% in developed markets, highlighting the heightened sensitivity of emerging currencies to global sentiment shifts (Della Corte et al., 2021). This differential sensitivity reflects the relative thinness of emerging foreign exchange markets, higher risk premia, and greater reliance on external financing. Moreover, Hofmann et al. (2020) document the strengthening relationship between the U.S. dollar and global risk aversion, where dollar appreciation during periods of market stress creates feedback loops that amplify financial distress in emerging economies through balance sheet effects and tightening financial conditions.

Our findings highlight important asymmetries in how global uncertainty affects emerging market currencies. Increases in economic policy uncertainty can lead to a reduction in foreign net buys, resulting in currency depreciation, while global market volatility affects related risk indicators such as CDS spreads (Perazzi & Romero, 2022). Furthermore, currency responses to uncertainty shocks appear to be more pronounced during economic downturns than during expansionary periods, creating particular challenges for countercyclical policy responses.

The differential impact of global uncertainty across emerging economies represents a critical insight from our analysis. Research by Kalemli-Özcan (2022) demonstrates that countries with stronger institutional frameworks, more developed local currency bond markets, and prudent fiscal positions

experience significantly smaller exchange rate depreciation during global risk-off episodes, highlighting the critical role of domestic factors in mediating global influences. This differential response creates what Ahmed et al. (2023) term the "divergence premium" in emerging markets, where investor discrimination based on fundamentals intensifies during crisis periods.

The implications for policy are substantial. Emerging economies with stronger macroeconomic frameworks can better withstand global uncertainty shocks, suggesting that institutional development and policy credibility represent important buffers against external volatility. Moreover, the development of local currency bond markets appears to reduce vulnerability to exchange rate pressures during periods of heightened global uncertainty, providing an important avenue for enhancing resilience.

3.2 Financial Integration and Spillover Effects

Our synthesis reveals that financial integration has fundamentally transformed exchange rate dynamics in emerging economies. The intensification of financial integration presents both opportunities and challenges, with greater financial openness increasing the sensitivity of emerging market currencies to global financial conditions (Chari et al., 2020). Portfolio flows have become more volatile and responsive to changes in advanced economy monetary policies, creating what Kalemli-Özcan (2019) terms the "dilemma not trilemma" – the difficulty of maintaining monetary independence even with flexible exchange rates in a world of integrated capital markets.

The transmission mechanisms through which global factors affect emerging market currencies have evolved significantly over the past two decades. Bruno and Shin (2022) document a shift from predominantly trade-based exchange rate determination to financial channel-based mechanisms, where global banking flows and international portfolio adjustments now play a more prominent role than current account positions. This shift reflects the deepening financial integration of emerging economies into global markets and has important implications for policy responses. Traditional approaches focused on trade competitiveness may prove insufficient when currency pressures emanate primarily from financial channels.

Empirical studies by Ahmed and Zlate (2014) reveal asymmetric responses to global financial conditions, where capital outflows during stress periods tend to be larger and more abrupt than inflows during calm periods, creating disproportionate depreciation pressures. Expanding on this theme, Forbes and Warnock (2021) develop a taxonomy of capital flow episodes (surges, stops, flight, and retrenchment) and demonstrate that global factors, particularly risk aversion and monetary policy shifts in advanced economies, are the dominant drivers of extreme capital flow movements affecting emerging market currencies.

The 2008 global financial crisis and subsequent events highlighted the susceptibility of emerging economies to external shocks, demonstrating how capital flow reversals can rapidly destabilize currency markets and trigger broader economic crises. More recently, the COVID-19 pandemic further illustrated this vulnerability, as unprecedented capital outflows, supply chain disruptions, and commodity price fluctuations created substantial pressure on exchange rates across the developing world (IMF, 2022). The varying policy responses to the pandemic and subsequent recovery trajectories have led to divergent exchange rate outcomes, underscoring the importance of domestic factors in mediating the impact of global dynamics.

These findings suggest that emerging economies need to adapt their policy frameworks to address the challenges posed by financial integration. The literature on policy responses highlights the evolving approach to exchange rate management in emerging economies. Ghosh et al. (2018) document a shift from rigid exchange rate regimes toward more flexible arrangements with occasional interventions, termed "managed floating." This approach attempts to balance the benefits of exchange rate flexibility with the need to mitigate excessive volatility. Furthermore, Gopinath and Stein (2022) highlight how the dominant currency paradigm—where global trade and finance are predominantly

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denominated in U.S. dollars—amplifies the transmission of global shocks to emerging economies through both trade and financial channels. This dollar dominance creates asymmetric adjustment pressures and limits the insulation properties of flexible exchange rates, challenging conventional policy frameworks.

3.3 Technological Innovations and Digital Finance

The impact of technological innovations on exchange rate dynamics represents an emerging and rapidly evolving area within the literature. Digital financial technologies, while reducing transactional frictions, can also amplify volatility in currency markets by increasing capital mobility. The growth of electronic trading platforms and algorithmic trading has accelerated the speed of exchange rate adjustments to news and reduced traditional arbitrage opportunities while creating new forms of market microstructure risks. These developments have important implications for market efficiency, liquidity, and volatility patterns in emerging economy currency markets.

Policy uncertainty has significant positive effects on the R&D investment and patent applications of enterprises; such positive effects are affected by the nature of the company's ownership, industry, financial constraints, and government subsidies (Qi et al., 2022). Firms that have more cash and access to government subsidies are more likely to invest in R&D and develop patents when faced with policy uncertainty. These findings highlight the complex interplay between uncertainty, technological innovation, and firm behavior, with potential implications for aggregate economic performance and exchange rate dynamics.

The rise of cryptocurrencies and blockchain technology presents both opportunities and challenges for emerging economy exchange rate management. While these technologies could potentially reduce transaction costs and expand financial inclusion, they also create new channels for capital mobility that may complicate exchange rate management. Moreover, the growing integration of fintech solutions into traditional banking systems may alter the transmission mechanisms of monetary policy, with implications for exchange rate determination and management.

The literature suggests that technological innovation may be changing the relative importance of different exchange rate determinants. Traditional macroeconomic factors such as interest rate differentials and inflation gaps remain important, but technological factors such as digital payment adoption rates and fintech investment flows are emerging as potential influences on currency valuations and capital movements. Together, these works underscore that both traditional macroeconomic uncertainties and emerging technological changes are critical for understanding exchange rate fluctuations in emerging economies (Passagi, 2020; Ariff & Zarei, 2018).

3.4 Commodity Market Dynamics

For commodity-exporting emerging economies, our analysis identifies strong linkages between commodity price cycles and exchange rate movements. Habib et al. (2023) document that commodity price shocks explain up to 50% of real exchange rate variability in commodity-dependent economies, with the effect becoming more pronounced during periods of heightened global market volatility. Chen et al. (2019) further demonstrate that the financialization of commodity markets has strengthened the correlation between commodity prices and emerging market currencies, as financial investors increasingly treat both asset classes as part of a broader risk portfolio.

The work of Fernández et al. (2018) highlights the asymmetric impact of commodity price shocks, where negative shocks lead to larger currency depreciations than the appreciations observed during positive shocks, creating challenges for macroeconomic stability. Moreover, Drechsel and Tenreiro (2018) find evidence of procyclical fiscal policies in commodity-exporting emerging economies, which tend to amplify rather than mitigate exchange rate volatility during commodity price cycles.

These findings suggest that commodity-exporting emerging economies face distinct challenges in exchange rate management. The close relationship between commodity prices and exchange rates can create vulnerability to external shocks beyond the control of domestic policymakers. Moreover, the financialization of commodity markets means that speculative flows rather than fundamental supply-demand factors may drive short-term price movements, potentially increasing exchange rate volatility.

Policy responses to commodity price-induced exchange rate volatility require careful calibration. Traditional interventions in foreign exchange markets may have limited effectiveness given the fundamental nature of these shocks. Instead, structural policies such as economic diversification, development of sovereign wealth funds, and adoption of well-designed fiscal rules may provide more sustainable approaches to managing the exchange rate implications of commodity price fluctuations.

3.5 Policy Implications and Future Research Directions

Our systematic review highlights several important implications for policy and research. First, the increasing complexity of exchange rate determination in emerging economies necessitates more sophisticated policy frameworks that address multiple transmission channels simultaneously. Analyzing the post-2008 era, Carstens and Shin (2019) observe the increased use of macroprudential policies to complement traditional monetary policy tools in managing capital flows and exchange rate pressures. Their research suggests that macroprudential measures can be effective in reducing the buildup of financial vulnerabilities that exacerbate exchange rate volatility during stress periods.

Second, the heterogeneity in how emerging economies respond to global shocks suggests that policy prescriptions should be tailored to specific country contexts, considering factors such as financial market development, institutional quality, economic structure, and existing vulnerabilities. One-size-fits-all approaches to exchange rate management are likely to be ineffective given the diverse nature of emerging economies and their varying integration into global financial markets.

Third, the growing importance of financial channels in exchange rate determination suggests that policies focusing solely on trade competitiveness may be insufficient. Policymakers should consider how monetary policy, financial regulation, and capital flow management interact to influence exchange rate dynamics in financially integrated emerging economies.

Finally, the rapid pace of technological change in financial markets requires proactive regulatory approaches that balance innovation and stability objectives. Regulatory frameworks should adapt to address the potential volatility implications of financial technologies while harnessing their efficiency and inclusion benefits.

Future research should explore several promising directions. First, more granular analysis of how country characteristics mediate the impact of global shocks would enhance our understanding of heterogeneity across emerging economies. Second, investigation of how technological innovations are reshaping exchange rate dynamics represents a critical frontier, particularly as digital currencies and payment systems continue to evolve. Third, exploration of the long-term structural implications of global integration for exchange rate determination would complement the current focus on short-term fluctuations and crisis episodes. Short term capital flows into emerging market securities may thus distort the long-run equilibrium of the foreign exchange market (Tule et al., 2017), but the mechanisms and implications of these distortions warrant further investigation.

4. CONCLUSION

This systematic review has synthesized the complex and multifaceted relationship between global market dynamics and exchange rate behavior in emerging economies. Our analysis reveals that exchange rate determination in emerging markets has evolved significantly, shifting from predominantly trade-based factors to increasingly complex financial mechanisms that reflect deeper global integration. The evidence consistently demonstrates that global uncertainty and risk factors serve

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as primary determinants of exchange rate volatility, with the VIX index and U.S. monetary policy decisions showing particularly strong correlations with currency movements in emerging markets. Importantly, our findings highlight significant heterogeneity in how these economies respond to global shocks, with institutional quality, financial market development, and macroeconomic fundamentals mediating the impact of external volatility. Countries with stronger institutional frameworks, more developed local currency bond markets, and prudent fiscal positions experience significantly smaller exchange rate depreciation during global risk-off episodes.

Financial integration has fundamentally transformed exchange rate dynamics, creating what some researchers term a "dilemma not trilemma" – the difficulty of maintaining monetary independence even with flexible exchange rates in a world of integrated capital markets. The shift from trade-based to financial channel-based exchange rate determination reflects the deepening financial integration of emerging economies and has critical implications for policy frameworks.

The rise of digital financial technologies introduces another dimension of complexity. While offering improved efficiency and financial inclusion, these innovations simultaneously create new forms of market microstructure risks and amplify volatility through increased capital mobility. The growing interdependence of commodity markets with foreign exchange markets adds further complexity, particularly for resource-dependent economies where price shocks in global commodities trigger significant currency movements through asymmetric mechanisms.

Our analysis underscores the necessity for policymakers in emerging economies to adopt adaptive, multifaceted approaches that balance the benefits of global integration with the need for macroeconomic stability. The evolution toward "managed floating" exchange rate regimes reflects this balancing act, while the increased use of macroprudential policies complements traditional monetary tools in addressing financial vulnerabilities that exacerbate exchange rate pressures.

The systematic nature of our review reveals important research gaps, particularly regarding the long-term structural implications of global integration for exchange rate determination and the evolving impact of technological innovation on currency markets. Future research should explore how country characteristics mediate the impact of global shocks, how technological innovations are reshaping traditional exchange rate dynamics, and the implications of the dominant currency paradigm for emerging economy policy autonomy.

Ultimately, this review contributes to a more nuanced understanding of exchange rate dynamics in emerging economies within an increasingly interconnected global financial system. The findings emphasize that strengthening institutional frameworks, enhancing policy transparency, developing local currency markets, and implementing forward-looking regulatory approaches for digital financial technologies will be essential for mitigating exchange rate volatility while preserving the benefits of global economic integration.

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