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Exchange Rate Misalignment and Economic Growth: A Thematic Review of Theory and Empirics

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ABSTRACT

The relationship between exchange rate and economic activities has remained the most questioned matter in international economics. Although typical economic philosophy advocates that exchange rate arrangements and misalignment should exercise momentous effects on trade, foreign investment, and economic expansion, but data driven evidence has repeatedly produced diverse and, every so often, inconsistent outcomes, thus intensifying the famous exchange rate disconnect puzzle. This review paper offers a wide-ranging thematic blend of the theoretical and empirical literature on determination of real exchange rate, estimation of equilibrium real exchange rate, exchange rate misalignment, and its growth effects on economic activities. The review builds on influential theoretic work from 1960s and empirical research studies available up to 2025, with more stress on post-1990 panel data evidence. The review shows that empirical evidence on exchange rate misalignment and its growth effects remains inconclusive, indicating considerable heterogeneity over different countries, timespans, and methodological methods. However numerous studies classify clear transmission mechanism like terms of trade, export competitiveness, investment choices, and production aspects but some highlight weak relationship. The literature review finds gaps linked to measurement selections, endogeneity apprehensions, and restricted regional exposure. The paper concludes by offering policy-oriented understanding for exchange rate management targeted at reducing misalignment and supporting long run economic growth.

Keywords: *Real exchange rate (RER); Equilibrium exchange rate; Exchange rate misalignment; Economic growth; FEER; BEER*

INTRODUCTION

Exchange rate as a dynamic macroeconomic variable enjoys a dominant place in international macroeconomics owing to its consequences on foreign competitiveness, resource distribution, and economic steadiness (Eichengreen, 2007; Conrad and Jagessar, 2018; Seraj and Coskuner, 2021; Kimolo et al., 2022). Conventional open-economy frameworks indicate that continuous fluctuations of the real

exchange rate (RER) compared to its equilibrium value[1] should affect export competitiveness, investment choices, and long-run economic expansion (Edwards, 1988; Broz et al., 2008; Dumrongrittikul and Anderson, 2016). Nevertheless, empirical studies have repetitively resisted to establish a steady and robust connection among exchange rates and real economic determinants, leading towards what has been labelled as the "exchange rate disconnect puzzle" (Meese and Rogoff, 1983; Obstfeld and Rogoff, 2000).

Against this background, a substantial part of literature has developed concentrating on three interconnected questions: how real exchange rate is determined, how equilibrium exchange rate is estimated, and whether exchange rate misalignment generate considerable effects on economic growth (Edwards, 1989; Elbadawi, 1994; Williamson, 2001; Aguirre and Calderon, 2005; Rodrik, 2008). In spite of wide-ranging research, results are inconclusive, varying across countries and regions, time spans, and estimation methods. These contradictions high spot the need for an organized blend of the literature that explains conceptual fundamentals, methodological adoptions, observed trends and empirics.

The dynamic link between exchange rate and economic expansion has changed over diverse academic and pragmatic stages over time, needing a comprehensive yet organized analysis of the literature. Inspiring conceptual developments evolving in the 1960 to 1980 laid the theoretical foundation of exchange rate determination and open-economy international economic transition. Successive eras witnessed the expansion of equilibrium exchange rate frameworks. Following the improved availability of country-level datasets and developments in econometric and estimation techniques since 1990s, empirical and data driven research studies have expanded considerably, predominantly in the setting of emerging economies. Consequently, this review paper covers the foundational conceptual studies from 1960s onward whereas giving more importance to data-driven research studies available after 1995 and extending to 2025. This organized chronological way allows the review to include the logical progression of the literature although keeping systematic relevance to current policy and empirical discussions.

This paper offers new insights by adding a thematic review of literature on the exchange rate misalignment[2] and economic growth. Instead of providing an only graphic review, it classifies present studies about important theoretical arguments, estimation methods, and empirical conclusions, with a specific weight on categorizing unanswered matters and research gaps related to developing economies.

The paper is planned in this way. Section 2 reviews theoretical fundamentals involving exchange rate and economic growth, Section 3 covers the core approaches to estimating equilibrium exchange rate and section 4 discusses the exchange rate misalignment and reviews the empirical literature on the growth effects of exchange rate misalignment. Section 5 identifies crucial challenges in the existing literature. Section 6 identifies the research gaps for further research and section 7 concludes this review paper through summarizing the key perceptions, and giving policy suggestions.

Theoretical Foundations: The Exchange Rate Dynamics and Economic Growth

The organized study of exchange rate in a comprehensive macroeconomic framework started with the introduction of the Mundell-Fleming model, which prolonged the IS-LM model from Keynesian framework to an open-economy background (Fleming, 1962; Mundell, 1963). Within such context, the

[1] Generally classified as exchange rate misalignment

[2] Exchange rate misalignment includes both undervalued and overvalued exchange rate. The value of exchange rate above its equilibrium level is termed as overvalued exchange rate and exchange rate below the equilibrium level is called undervalued exchange rate.

exchange rate performs as a key adjustment instrument. Under flexible managements, it acts as "shock absorber" that maintains external balance (Broda, 2004), however, in fixed regime, it can be a cause of structural disequilibrium if not adjusted with economic determinants (Edwards, 1989; Obstfeld and Rogoff, 1995; Goldstein, 1998).

As the models transitioned towards the Monetary Approach, it shifted the emphasis from terms of trade to the market forces of general money stocks (Mussa, 1982; Frenkel, 1976). According to this interpretation, exchange rate is the comparative price of two currencies, set via relative demand for currency in each economy. This method strengthened the long-run soundness of Purchasing Power Parity (PPP), formerly backed by Cassel (1918), which suggests that exchange rate arrangements should ultimately counterbalance changes in inflation rate to match the purchasing power across countries. After this traditional standpoint, "equilibrium" is an unchanging state well-defined by means of monetary fundamentals.

Nevertheless, an important modification to traditional representations occurred through Overshooting Model by Dornbusch. He considered volatility of exchange rate in short run with its long-run equilibrium by including "sticky prices" into the Mundell-Fleming model (Dornbusch, 1976). it is explained that by reason of "sticky" prices compared to speedy financial market tunings, exchange rate might "overshoot" from its long-run equilibrium value. This background offers the theoretical validation for short-term exchange rate misalignment in spite of good economic health (Dornbusch, 1976; Obstfeld and Rogoff, 1996). Accordingly, these frameworks serve as the analytical standard for this review paper to compute exchange rate deviations and consequent effect on growth.

The theoretic connection among exchange rates and economic growth works mostly through tradable sectors. Classical and structuralist philosophies highlight that a correctly valued real exchange rate is important in sustaining trade competitiveness, helping export-driven growth, and inducing investment in tradable sector (Razin and Collins, 1997; Eichengreen, 2007; Rodrik, 2008). Constant deviation of exchange rate from equilibrium level can severely affect relative prices of goods, optimum allocation of resources, international trade balance and investment opportunities (Elbadawi, 1994; Edwards, 1997).

Exchange rate overvaluation is frequently claimed to weaken growth by dropping export cost-effectiveness and disheartening investment (Ambaw and Sim, 2021; Tipoy et al., 2018), whereas restrained undervaluation might increase economic growth via industrial development and output expansion (Dollar, 1992; Bleaney and Greenaway, 2001; Wang and Barret, 2007; Gala, 2008; Glüzmann et al., 2012; Papanikos, 2015; Njindan, 2017).

Models like Balassa–Samuelson describe real exchange rate fluctuations through output differences among tradable and non-tradable sectors (Balassa, 1964; Samuelson, 1964), though development-driven models stress the importance of exchange rate as a policy tool for structural revolution (Rodrik, 2008). Simultaneously, contemporary macroeconomic frameworks and models integrating price inflexibilities and imperfect competition recommend that exchange rate impacts might be overdue, serving describe the weak short-run connection among exchange rates and output growth.

These opposing theoretic standpoints reinforce the persistent discussion over whether exchange rate expressively influences long-run expansion or whether it simply echo fundamental economic circumstances.

To review the various views discussed so far, Table 1 offers a comparative summary of the essential theoretical schools regarding exchange rate changing aspects. This summary highpoints the evolution which places the real exchange rate as a tactical tool for economic growth and structural change.

Table 1: Theoretical Foundations on Exchange Rate and Economic Growth

Research Study	Theoretical Framework	Principal Argument
Samuelson (1964); Balassa (1964)	Balassa–Samuelson Hypothesis	Output differentials among tradable and non-tradable sectors determine real exchange rate fluctuations.
Edwards (1989)	Open economy model	Continuous exchange rate misalignment changes resource distribution and delays growth.
Williamson (1994)	FEER Approach	Equilibrium exchange rates are dependable on internal and external balances.
Obstfeld and Rogoff (2000)	New open economy macroeconomic models	Nominal inflexibilities and market resistances fade the short-run relation between exchange rate and economic activity.
Rodrik (2008)	Structuralist view	Undervaluation enhances growth by helping tradable and industrial sector.

Source: Compiled by author.

As demonstrated above, the theoretic concepts have changed from considering the exchange rate as a price indicator to an important cause of industrial development.

Approaches to Estimating the Equilibrium Real Exchange Rate

The main aspect in literature is estimating the equilibrium real exchange rate. Some approaches have been established; each based on different theoretic assumptions.

Primary research studies like Cassel (1918) depend upon purchasing power parity (PPP) as a standard; It was based on law of same price in long run and it considered quantity theory of money as an extension for open economy framework (Friedman, 1989). The Purchasing Power Parity (PPP) theory hypothesizes that exchange rate is determined by the relation of comparative price levels among nations. However, its robust assumptions like universally homogenous commodity baskets; and poor experimental performance as inconsistencies in national price index across economies restricted its practicality (Bhatti et al., 2018).

Structural styles for instance the Fundamental Equilibrium Exchange Rate (FEER) approach state equilibrium exchange rate as the exchange rate in line with internal and external balances; however, involve prescriptive judgments and comprehensive macroeconomic forecasts (Williamson, 1983; Bayoumi et al., 1994).

The Behavioral Equilibrium Exchange Rate (BEER) approach has turned out to be mainly dominant by reason of its pragmatic flexibility. BEER approach estimates equilibrium exchange rate as function of evident economic essentials, for example domestic credit, productivity, terms of trade, foreign assets, and government expenditures (Clark and MacDonald, 1998; Edwards, 1988). Different research studies estimated equilibrium exchange rate through fundamentals and used advanced techniques like co-integration for long run relationship by utilizing panel data for this purpose (Achy, 2001; Madouni, 2014; Tipoy et al., 2018).

In the same way, the natural real exchange rate (NATREX) approach highlights medium and long run steady paths induced by dynamic forces of savings and capital formation. It is an extension of FEER approach (Dikmen, 2009). Though these methods contrast in procedure, they all explain that equilibrium exchange rate is characteristically time-varying and susceptible to model selection.

Given the various existing practices for estimating equilibrium exchange rate, it is indispensable to differentiate between their theoretic basics and practical applications. Table 2 precises the prominent features of the top equilibrium exchange rate approaches, presenting a relative study of their capacity and integral restrictions within the comprehensive macroeconomic landscape.

Table 2: Approaches to Estimating the Equilibrium Real Exchange Rate

Approaches	Salient Attributes	Merits	Demerits
Purchasing Power Parity	Long-run price convergence	Simple standard baseline	Weak short and medium run robustness
FEER	In line with macro balances	Policy-oriented	Involves normative norms
BEER	Regression-based relation with determinants	Empirical adaptability	Responsive to variable choice
NATREX	Medium to long-run framework	Dynamic explanation	Difficult application

Source: Compiled by author.

Empirical Evidence on Exchange Rate Misalignment and Economic Growth

Exchange rate misalignment is characteristically defined as the difference between real exchange rate and its equilibrium value (Edwards, 1996). Positive deviations are taken as overvaluation, whereas negative deviations show undervaluation (Zakaria, 2010). Measurement adoptions together with the estimation practices, selection of fundamentals, and time spans play a central role in defining persistence and the extent of ER misalignment.

Various studies identified some important factors which caused ER misalignment for panel of countries. Edwards (1988) for 12 countries including Malaysia and Colombia and Sekkat and Varoudakis (2000) for 22 African countries used government spending, capital inflow, trade openness, domestic credit, terms of trade and productivity differentials as determinants of exchange rate by applying fixed effect method. Bereau et al. (2012) and Couharde and Sallenave (2013) covered emerging economies and developed countries by applying panel smooth transition method. They identified trade openness, terms of trade, productivity differentials and foreign assets as ER fundamentals.

In the same way, Elbadawi (1994) measured equilibrium real exchange rate for African countries over the time period 1970–1990 and stated that extensive misalignment was there due to economic instability. In the Latin American countries, extended overvaluation throughout the 1980s debt trap period was often reported, although undervaluation was observed in East Asian countries during export-driven growth chapters (Rodrik, 2008).

Aguirre and Calderon (2005), by using panel data of 60 economies covering the time period 1965–2003, estimated equilibrium exchange rate and misalignment based on BEER approach and stated that overvaluation caused strong negative impacts on economic growth and undervaluation created positive effects. Likewise, Rodrik (2008), using a large panel dataset considering both advanced and emerging countries from 1950 to 2004, created an undervaluation index grounded on PPP-adjusted real ER and stated that continued undervaluation is linked with enhanced economic growth in developing economies. Though, this bond seems weak and irrelevant for developed economies.

Coudert and Couharde (2009), investigating a set of developing economies for the time period 1980–2007, pinpointed substantial misalignment associated with terms of trade and capital flow shockwaves. These results show heterogeneity across countries, as Latin American and East Asian countries exhibiting diverse misalignment aspects.

On the other hand, several research studies, like Mukaila and Arene (2022) for Nigeria, Ebaidalla (2014) for Sudan, Diop et al. (2018) for Senegal, Zakaria (2010) and Manan and Saeed (2025) for Pakistan, were conducted for specific country cases to measure exchange rate misalignment. They considered exchange rate fundamentals for instance trade openness, productivity differentials, terms of trade, government spending, foreign assets, capital inflows, and domestic credit etc. and applied Co-integration technique. Country-specific case studies repeatedly consider developing economies because exchange rate misalignment might have robust macroeconomic significances. They documented recurrent events of continuous overvaluation preceding market crisis and external shocks. Country-level studies normally considered extended time periods (e.g., 1995-2023 or 1970–2005), letting verification of persistent deviations instead of short-run variations.

Data driven research studies exploring the growth effects of exchange rate misalignment provide diverse findings. Country specific cases and panel studies mention that overvaluation for a long period of time is linked with slow growth levels, mostly in emerging economies through external imbalances and balance of payment problems (Edwards, 1989). On the other hand, reasonable undervaluation caused economic expansion, particularly in export-oriented countries (Rodrik, 2008). Some studies explore that unnecessary or continued misalignment, irrespective of direction, can create economic distortions in macroeconomic settings and in resource allocation (Aguirre & Calderon, 2005).

Empirical research studies explain considerable heterogeneity in estimates of misalignment across economies and time periods, raising apprehensions about model requirement. This understanding has started discussion on whether ER misalignment describes meaningful distortions in economy or replicates statistical values. Even so, ER misalignment extensively used in growth regressions empirically and for policy designs.

Though, further studies describe weak or irrelevant effects, offering support to “exchange rate disconnect puzzle”. Variations in time period of data, selection of country, econometric methods of estimation, and choice of control variables play their active role for these conflicting conclusions. Indication from Asian economies is mainly heterogeneous, describing different exchange rate regimes, structural changes, and experience to external shockwaves.

To offer an organized outline of empirical literature, Table 3 reviews main researches studying exchange rate misalignment and its growth effects. The table covers countries under consideration, estimation techniques, and major findings.

Table 3: Empirical Literature on Exchange Rate Misalignment and Economic Growth

Research Study	Sample Countries	Econometric Methodology	Results
Dollar (1992)	95 emerging economies	Country level regression analysis	Overvaluation adversely affects economic growth.
Easterly (2005)	Developing countries	Panel data analysis	Prolonged overvaluation weakens economic growth.
Aguirre & Calderon (2005)	60 economies	Nonlinear panel data model	Overvaluation disrupts growth; modest undervaluation enhances growth.
Gala (2008)	Latin American and Asian countries	Panel data analysis	Undervaluation of exchange rates enhances growth.
Rodrik (2008)	184 economies	Panel regression framework	Undervaluation encourages growth, particularly in emerging countries.
Haddad & Pancaro (2010)	Developing Economies	Panel regression method	ER Misalignment depends upon trade openness.
Elbadawi et al. (2012)	Emerging countries	Dynamic panel data analysis	Exchange rate Misalignment impacts differ by region and ER regime.

Source: Compiled by author.

As discussed in Table 3, empirical results are mixed across economies, time spans, and estimation methods. Even though numerous studies explain that continuous overvaluation badly affects economic expansion, the growth-promoting effects of undervaluation seem uncertain and situation-specific. The disagreement in outcomes can mainly be attributed to changes in model description, sample structure, and extent of equilibrium exchange rates.

Methodological Challenges

A critical review of literature shows some procedural difficulties that hinder the systematic precision of empirical explanations. Main among these is basic simultaneity and endogeneity between exchange rate and economic expansion, which confuses the specification of fundamental directions (Rodrik, 2008; Barder, 2011). Moreover, measurement errors in estimation method of unobservable equilibrium standards, accompanied by structural heterogeneity across various countries, cause unavoidable issues to cross-country assessments (Dunaway et al., 2009; MacDonald, 2000). These complexities are intensified through temporary market instabilities and speculative variability, which frequently complicate the ultimate long-run relation amongst real exchange rates and economic expansion (Driver and Westaway, 2005). Accordingly, disentangling eccentric shocks from general tendencies remain an estimation problem in the existing area of research. Current studies increasingly use dynamic panel data styles, nonlinear settings, and regime depictions to evade these issues, thus far agreement remains ambiguous.

Theoretical Synthesis and Research Lacunae

A review of the main theoretic and empirical literature shows that estimation of equilibrium exchange rate has evolved from the parsimonious standards of Purchasing Power Parity (PPP) on the way to further analytically multipurpose and macro critical contexts. Though the PPP method offers a continuing systematic anchor, its dependance on the "Law of One Price" every so often misses the mark to represent the structural heterogeneousness and productivity differences essential in developing markets. In contrast, behavioral frameworks precisely the FEER and BEER approaches, offer better descriptive dimensions through integrating various monetary and fiscal fundamentals into the equilibrium calculation. Nevertheless, the selection among these representations frequently comprises a trade-off amongst the inflexible consistency of the FEER and the operational controllability of the BEER. Through combining these viewpoints, it becomes obvious that no single approach is generally superior; somewhat, the effectiveness of a method is dependent on the detailed economic background and the formal aims of the study.

Amalgamating the theoretic literature identifies these significant gaps. Primary, there is partial consensus on the most suitable method for estimating equilibrium exchange rates, predominantly in emerging countries. Another, long-run panel data evidence that conjointly studies equilibrium estimation, exchange rate misalignment, and economic growth within a combined context remains rare. Last, region-explicit studies, exclusively for Asian countries over long periods, are understated, in spite of the region's exceptional experience to financial crises and basic structural revolution.

Focusing these research gaps involves cohesive empirical approaches that consider robust estimation of equilibrium exchange rate with analysis of growth effects over lengthy horizons.

CONCLUSION AND POLICY RECOMMENDATIONS

This study highlights that exchange rate misalignment and its growth effects remain a theoretically sophisticated but then again empirically interesting and challenging domain of research. Even though theoretic model recommends an insightful relationship between exchange rate and economic growth, but pragmatic evidence is inconclusive because of operational and circumstantial reasons. Meant for policy advisers, the outcomes emphasize the role of sidestepping long episodes of misalignment that generate macroeconomic uncertainty.

Future research studies should concentrate on long-run panel analyses that clearly represent region-specific structural disruptions, regime alterations, and endogeneity. Such exertions are indispensable for defining the "exchange rate disconnect puzzle" and for advising active exchange rate strategy in developing economies.

Policy actions must shift from submissive observation to practical supervision, guaranteeing that exchange rate arrangements are align through longstanding macro purposes for instance export attractiveness and economic stability. Finally, the actionable perceptions resulting from this review of research studies offer a strong underpinning for established frameworks pointed at mitigating exchange rate misalignment in fragmented international economy.

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