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Modeling Inflation, Public Debt, and Exchange Rate Dynamics in Small Open Economies: A Systematic Review and Bibliometric Synthesis

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Systematic Review

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Abstract

Introduction. Small open economies (SOEs) must simultaneously manage inflation, public debt, and exchange rate dynamics. Although a vast econometric literature exists, it lacks systematic mapping regarding model selection, theoretical grounding, geographic coverage, reporting transparency, and citation visibility.

Methods. Following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, we searched six major databases (1970–2026) programmatically using Python 3.12 and supplementing it with manual searches. Quota-balanced screening yielded 120 studies across eight econometric families. We introduced the Theory–Diagnostics–Method–Transparency (TDMT) framework to evaluate theoretical anchors, data-structure diagnostics, reporting transparency via a five-proxy audit, and citation-velocity funnel asymmetry.

Results. Autoregressive distributed lag (ARDL) and nonlinear autoregressive distributed lag (NARDL) models dominated the corpus (18.3%), followed by dynamic stochastic general equilibrium (DSGE) and New Keynesian Phillips Curve (NKPC) approaches (13.3%), and error-correction model (ECM) and vector error-correction model (VECM) specifications (12.5%). Reporting transparency varied sharply: only 6.2% of DSGE studies stated explicit sample periods, compared to 52.0% of ARDL studies, while under 30% of studies across all families reported diagnostic checks. Significant citation-funnel asymmetry (slope = −1.27, $p = 0.005$) revealed that older foundational papers draw disproportionate citation attention relative to recent, policy-relevant regional studies.

Discussion. The TDMT framework identifies literature ready for meta-analytic pooling, highlighting ARDL/NARDL and ECM/VECM as immediate candidates. This review provides a decision framework linking theory, data, and policy questions to guide model selection and bridge the gap between macroeconomic theory and applied practice in SOEs.

Keywords: fiscal-monetary nexus, currency depreciation, reporting transparency, citation-visibility bias, open-economy trilemma, model selection criteria

JEL classification: E31, E52, E62, F31, F41, H63, C32

1. Introduction

1.1 Background and motivation

Inflation, public debt, and the exchange rate are not independent problems in a small open economy. They are three expressions of a single fiscal-financing and balance-of-payments constraint, and movement in any one of them tends to propagate through the other two. When the domestic currency depreciates, imported goods and foreign-currency-denominated debt both become more expensive in local terms (Okyere & Jilu, 2020). When government deficits are financed by the central bank or by short-dated domestic borrowing, inflation expectations rise and the exchange rate comes under pressure. And when inflation runs above target, it erodes the real value of tax revenue and of outstanding debt alike, altering the fiscal arithmetic that produced the deficit in the first place. This closed loop, sometimes described as the “unholy trinity” of

inflation, debt, and the exchange rate in fiscally dominant economies, has defined Ghana's macroeconomic trajectory for three decades and shapes comparable small open economies across Sub-Saharan Africa and other low- and middle-income countries (Chhibber & Fischer, 1991; Loening et al., 2009).

The econometric toolkit available to study this trinity has expanded considerably since the 1990s. Early applied work relied on single-equation cointegration and error-correction methods (Metin, 1998), building on the wider diffusion of Engle-Granger and Johansen-style techniques into development macroeconomics. From the early 2000s, bounds-testing autoregressive distributed lag (ARDL) methods gained popularity because they remain valid regardless of whether the underlying variables are integrated of order zero or one, a property well suited to the short, structurally unstable time series typical of many developing economies. Much of the literature subsequently moved toward ARDL and, later, its asymmetric extension, nonlinear ARDL (NARDL), which allows inflation, debt, or exchange rate responses to differ in size and direction (Sheikh et al., 2020; Bala & Chin, 2018). Alongside this, the macro-forecasting literature built on vector autoregressions (VAR), structural VARs (SVAR), and time-varying-parameter VARs (TVP-VAR), which let the inflation-debt-exchange rate relationship evolve over time rather than assuming one fixed structure (Stock & Watson, 2001). A third strand, rooted in New Keynesian macroeconomics, embeds inflation dynamics in a micro-founded dynamic stochastic general equilibrium (DSGE) framework anchored on the New Keynesian Phillips Curve (NKPC), extended to open economies through incomplete pass-through and terms-of-trade shocks (Gali & Monacelli, 2002; Itskhoki & Mukhin, 2017). A fourth strand applies generalized autoregressive conditional heteroskedasticity (GARCH)-family models to exchange rate and inflation volatility, motivated by evidence that volatility itself damages investment and growth (Aghion et al., 2009; Morina et al., 2020). Finally, cross-country panel and generalized method of moments (GMM) estimators test debt-growth, debt-inflation, and exchange rate-growth relationships across groups of small open economies (Butkus & Seputiene, 2018; Onuoha et al., 2023).

Ghana's own economic history illustrates why this trinity, and the toolkit built to study it, matters in practice and not only in theory. The country's 1983 Economic Recovery Programme marked a decisive shift away from administered exchange rates and fiscal repression toward a market-based framework. Successive exchange rate and monetary policy reforms followed through the 1990s and 2000s, and the Bank of Ghana formally adopted inflation targeting in 2007 (Kovanen, 2011; Akosah, 2015). Since then, Ghana has repeatedly seen fiscal deficits, rising public debt, and cedi depreciation move together, most visibly around the 2014 to 2015 balance-of-payments crisis, the 2015 to 2018 International Monetary Fund (IMF) Extended Credit Facility programme, and the 2022 to 2023 sovereign debt distress that led to a formal restructuring under the Group of Twenty Common Framework and a further IMF-supported programme. Each episode has generated its own wave of applied econometric research, testing whether the fiscal deficit or the money supply is the primary driver of inflation (Adu & Marbuah, 2011; Duodu et al., 2022), how quickly and completely currency depreciation passes through to consumer prices (Frimpong & Adam, 2010; Razafimahefa, 2012), and whether Ghana's rising public debt has already crossed a threshold beyond which further borrowing hurts rather than helps growth (Hilton, 2021; Abille & Kilic, 2023). This review anchors its framing on Ghana: 46 of the 120 studies in the final corpus are Ghana-based (see Methods), because this specific, intensively studied national case offers the richest available evidence for constructing a methodologically oriented map of the wider small-open-economy literature. The review also draws on 44 further Sub-Saharan African and small-open-economy studies alongside its Ghana-anchored subset, so that the resulting map is not built on Ghana's experience alone. Cross-country evidence on fiscal and monetary anchors situates this national experience within a wider regional pattern: Ghura (1998) links tax-revenue performance to policy distortions and corruption, Baldini and Poplawski Ribeiro (2008) show that credible fiscal and monetary anchors materially improve price stability across Sub-Saharan Africa, Bazzoni and Nashashibi (1993) trace how alternative exchange rate strategies shaped fiscal outcomes in earlier reform episodes, Atta-Mensah and Ibrahim (2020) set out the arithmetic linking debt accumulation to policymakers' financing choices, and the International Monetary Fund (2023, 2024) documents the continued fragility of the region's post-pandemic recovery.

1.2 Theoretical framework

Although the applied literature reviewed here is largely reduced-form, each of its major model families answers to an identifiable body of macroeconomic theory, and making that lineage explicit is a necessary step before the literature can be mapped. Four theoretical strands anchor the review.

The first is the open-economy trilemma associated with the Mundell-Fleming framework, which holds that a country cannot simultaneously maintain free capital mobility, a fixed exchange rate, and independent monetary policy. Small open economies that liberalize capital flows while pursuing an inflation target, as Ghana has done since 2007, are theoretically predicted to experience exactly the kind of exchange rate and inflation volatility that motivates the GARCH-family and VAR-family literatures reviewed in Section 2.

The second is the theory of fiscal and monetary dominance formalized by Sargent and Wallace's "unpleasant monetarist arithmetic," and extended empirically to developing-country contexts by Baldini and Poplawski Ribeiro (2008) and Nguyen et al. (2021). Under fiscal dominance, persistent deficits eventually force monetary financing regardless of the central bank's stated objectives, so that inflation becomes a fiscal rather than a purely monetary phenomenon. This theory directly motivates the ECM/VECM (error-correction and vector error-correction) and ARDL-based studies of the deficit-money-inflation nexus discussed in Section 2.4, and it is the theoretical lens through which Ghana's repeated fiscal-deficit-driven inflation episodes are best interpreted.

The third is exchange rate pass-through theory, which traces its lineage to the monetary approach to the balance of payments and to purchasing power parity, and which predicts that pass-through should be incomplete and state-dependent, varying with trade openness, monetary policy credibility, and the size and direction of the underlying shock (Taylor & Taylor, 2004; Forbes et al., 2018). This theory motivates both the ARDL and NARDL applications reviewed in Section 2.1 and the specific asymmetric pass-through hypothesis, that depreciation transmits to prices faster than appreciation, tested throughout the Ghana-anchored literature in Section 2.8.1.

The fourth is the intertemporal government budget constraint that underlies formal debt sustainability analysis: a government's debt path is sustainable only if the present value of future primary surpluses is sufficient to service outstanding obligations, a condition that becomes binding once growth falls persistently below the effective interest rate on debt. This theoretical benchmark, developed in the debt sustainability literature and applied regionally by Atta-Mensah and Ibrahim (2020) and Butkus and Seputiene (2018), underlies the panel, GMM, and ARDL-based debt-growth studies reviewed in Sections 2.6 and 2.8.3.

Read together, these four strands explain why the eight econometric families catalogued in this review exist and what each is designed to test: the trilemma and pass-through theory motivate the exchange rate-focused ARDL, VAR, and GARCH literatures; fiscal and monetary dominance theory motivates the ECM/VECM and Panel/GMM literatures on deficits and inflation; and intertemporal budget constraint theory motivates the debt-growth and debt-sustainability literatures. The DSGE/NKPC family occupies a distinct position, since it derives inflation dynamics from micro-founded optimization under nominal rigidities (Gali & Monacelli, 2002) rather than a reduced-form macro identity, one reason, developed further in Sections 2.3 and 5.3, why DSGE studies in this corpus report their empirical basis so differently from the other seven families. This theoretical scaffolding, rather than citation counts or convenience, is what the review's coding scheme and its decision framework (Section 5.8) are built upon.

1.3 Positioning and contribution

A single existing bibliometric review, Melaku (2021), has catalogued the substantive determinants of inflation identified across Sub-Saharan African studies. Other work nearby in this space, for example on exchange rate regime choice (Calvo & Mishkin, 2003) or on the design of inflation targeting in emerging markets (Fraga et al., 2003), is narrative rather than systematic and does not apply a pre-registered search-

and-screening protocol. Melaku (2021) is a valuable contribution but differs from the present review in three respects. First, it is confined to inflation determinants and does not extend to the public debt or exchange rate legs of the trinity, nor to their joint modeling. Second, it synthesizes substantive findings, which macroeconomic variables matter, rather than mapping the methodological landscape: which frameworks are used, how they are distributed across geography and venue, and how transparently they are reported. Third, it does not include a citation-visibility or reporting-transparency audit of the kind conducted here. No prior review of this literature has combined a pre-registered PRISMA-style protocol with an explicit theoretical classification of model families, a full-text reporting-transparency audit, and a formal test of citation-visibility bias, and translated the result into a practitioner-facing decision framework. That combination is the specific contribution of this review: it identifies not only what the literature has found, but which parts of it are methodologically and theoretically ready for the next stage of quantitative synthesis, and which are not.

1.4 Aim and objectives

This systematic review aimed to map the methodological evolution, theoretical grounding, geographic spread, publication landscape, and reporting quality of econometric research on the inflation-public debt-exchange rate nexus in Ghana and comparable small open economies, and to translate this evidence into a practical framework for model selection. To achieve this aim, the review addressed the following objectives:

- To describe how econometric model families (ARDL/NARDL, VAR/SVAR/TVP-VAR, DSGE/NKPC, ECM/VECM, GARCH, panel/GMM) have been applied to inflation, debt, and exchange rate dynamics in small open economies between 1991 and 2026, connecting each family to its underlying macroeconomic theory.
- To measure the geographic spread of this literature, distinguishing Ghana-anchored, other Sub-Saharan African, other emerging-market or small-open-economy, and methodologically foundational studies, and to relate this spread to model family.
- To assess publication venues, open-access availability, and citation-impact distribution, including a bibliometric check for visibility asymmetry analogous to a small-study or publication-bias check in meta-analysis.
- To evaluate reporting transparency, namely explicit sample periods, named econometric methods, named data sources, robustness reporting, and explicit policy implications, as a rigor proxy across model families.
- To propose an evidence-based, theory-consistent decision framework that matches data availability and policy question to an appropriate model family for researchers and central bank analysts.

The remainder of the article is organized as follows. Section 2 reviews each model family thematically and synthesizes the Ghana-anchored evidence narratively. Section 3 sets out the search, screening, and coding protocol. Section 4 reports the bibliometric findings. Section 5 discusses these findings, states limitations, and proposes a practitioner decision framework. Section 6 concludes and outlines directions for future quantitative meta-analytic work.

2. Thematic Literature Review

2.1 Theoretical Framework

2.1.1 ARDL and NARDL bounds-testing approaches

The autoregressive distributed lag bounds-testing framework is the single most common method in the screened corpus, coded as the primary approach in 22 of 120 studies (18.3%). Its popularity in small-open-economy research follows directly from a practical property grounded in the theory of cointegration: the bounds test remains valid whether the underlying variables are integrated of order zero or one, which suits the short and structurally unstable time series typical of many Sub-Saharan African and other emerging-market economies. Within Ghana, Kwofie and Ansah (2018) applied ARDL cointegration and its error-correction form to monthly inflation, exchange rate, and stock-return data from 2000 to 2013, while Hilton (2021) used a dynamic multivariate ARDL-based Granger-causality model to test the two-way relationship between public debt and growth in the post-coronavirus disease 2019 (COVID-19) borrowing period. Beyond Ghana, Adaramola and Dada (2020) applied ARDL to Nigerian data from 1980 to 2018 and found that both inflation and the real exchange rate significantly reduce growth, while Bala and Chin (2018) extended the framework to an asymmetric panel across Algeria, Angola, Libya, and Nigeria, testing whether oil-price increases and decreases pass through to inflation by the same amount and finding, as much of the NARDL literature does, that they do not.

The shift from symmetric ARDL to asymmetric NARDL specifications is one of the clearest trends over time in the corpus (see Results). Sheikh et al. (2020), working outside the Sub-Saharan African context but methodologically representative of the wider NARDL literature regional researchers draw on, used nonlinear ARDL to show that the relationship between oil-price, gold-price, and exchange rate swings and stock indices was asymmetric before and after the 2008 global financial crisis. This asymmetric-response logic, that depreciation may pass through faster than appreciation, or that debt accumulation may harm growth nonlinearly above a threshold, fits naturally with the pass-through theory set out in Section 1.2 and with economies facing frequent, largely one-directional depreciation episodes. Even so, NARDL applications remain a minority within the ARDL family even after 2018, suggesting continued reliance on the simpler symmetric specification where the underlying economics is unlikely to be symmetric.

2.1.2 Vector autoregression, structural VAR, and TVP-VAR approaches

VAR-family models account for 10 primarily coded studies (8.3%) but underpin much of the field's methodological vocabulary. Stock and Watson's (2001) review remains the most-cited methodological reference in the corpus for VAR analysis, setting out the standard distinction between reduced-form, recursive, and structural VARs and how each suits description, forecasting, or policy analysis, a distinction that matters directly for central banks deciding whether a VAR exercise is meant to forecast inflation or identify a structural monetary-policy shock. Applied VAR work on inflation-exchange rate-growth dynamics in small-open-economy contexts is illustrated by Amarasekara (2009), who used recursive and structural VAR specifications on Sri Lankan data from 1978 to 2005 to trace the effects of interest-rate, money-growth, and exchange rate shocks on growth and inflation, and by Solomon and De Wet (2004), who examined the deficit-inflation channel in Tanzania from 1967 to 2001 using cointegration analysis with dynamic simulation, a hybrid of the error-correction and VAR traditions that recurs throughout the Sub-Saharan African literature.

Time-varying-parameter VAR specifications allow the inflation-debt-exchange rate relationship to change smoothly over time, rather than assuming one fixed structural relationship across a sample that may span several exchange rate regimes, IMF programme periods, or commodity-price cycles. These specifications appear in the corpus but remain sparse relative to their theoretical appeal for a country such as Ghana, whose monetary and exchange rate regime has changed materially since the 1983 Economic Recovery Programme, the 2007 adoption of inflation targeting, and repeated fiscal consolidation episodes since 2015. This scarcity, visible in the model-family by geography cross-tabulation reported in Section 4, is a specific and addressable gap: the small-open-economy literature has strong theoretical grounds to use TVP-VAR but has not yet adopted it at the rate seen in the advanced-economy VAR-family literature.

2.1.3 DSGE and New Keynesian Phillips Curve approaches

DSGE and NKPC-anchored studies together make up 16 primarily coded studies (13.3%), concentrated heavily among the advanced-economy, methodologically foundational part of the corpus rather than among Ghana- or Sub-Saharan Africa-anchored applied studies. Gali and Monacelli's (2002) small-open-economy New Keynesian model, which derives optimal monetary policy under incomplete exchange rate pass-through, underlies almost all later open-economy NKPC work. Itskhoki and Mukhin (2017) extend the general-equilibrium exchange rate literature to jointly explain the Meese-Rogoff disconnect puzzle, the purchasing-power-parity puzzle, and the uncovered-interest-parity puzzle within one structural framework. Taylor's (1995) empirical framework for the monetary transmission mechanism, and Nakov and Pescatori's (2010) DSGE-based decomposition of the United States' Great Moderation into oil-shock and monetary-policy channels, further illustrate the tradition's focus on identifying structural shocks rather than simple reduced-form association. Eggertsson et al. (2019) extend this tradition to a 56-period quantitative life-cycle DSGE model of secular stagnation, illustrating how far the DSGE frontier has moved from the data and computing resources available to most Sub-Saharan African central banks and university departments.

This concentration matters in practice. As reported in Section 4.6, DSGE/NKPC studies state an explicit sample period in only 6.2% of cases, the lowest rate of any model family, consistent with DSGE's calibration-and-simulation tradition, in which parameters are often taken from other studies or from steady-state ratios rather than estimated from a single dated dataset. This is not a weakness of DSGE work on its own theoretical terms, since the family's micro-founded structure (Section 1.2) is designed for calibration rather than reduced-form estimation, but it does mean that DSGE studies are structurally the hardest family in this corpus to compare, replicate, or eventually pool against a specific Ghanaian or regional data vintage.

2.1.4 Error-correction and cointegration approaches

Error-correction and vector-error-correction models form a major family in the corpus, with 15 primarily coded studies (12.5%), ranking behind only ARDL/NARDL, a miscellaneous "other" category of general empirical studies, and DSGE in primary-family size. The family bridges the single-equation ARDL tradition and the multi-equation VAR tradition, and is the natural empirical counterpart to the fiscal and monetary dominance theory introduced in Section 1.2. Metin's (1998) multivariate cointegration analysis of the inflation-budget-deficit relationship in Turkey is an early and frequently cited example applied to a fiscally dominant small open economy, finding that the scaled budget deficit, income growth, and debt monetization jointly drive inflation. Within the Sub-Saharan African context, Loening et al. (2009) used error-correction models to decompose Ethiopian inflation into cereal-price, food-price, and non-food-price contributions, finding that cereal-price shocks dominate the short-run process while longer-run dynamics unfold over three to four years, a finding relevant to Ghana, where food-price shocks are similarly linked to headline inflation volatility. Ibrahim and Musah (2014) applied Johansen cointegration and a VECM to Ghanaian stock-return and macroeconomic data from 2000 to 2010, while Olusola et al. (2022) used Engle-Granger cointegration to link Ghanaian inflation to private consumption expenditure and growth. Chhibber and Fischer's (1991) edited World Bank volume on economic reform in Sub-Saharan Africa remains a foundational reference for the institutional setting in which these cointegration studies are usually interpreted.

2.1.5 GARCH-family volatility approaches

GARCH-family models, coded as the primary approach in 11 studies (9.2%), shift the focus from the average level of inflation or the exchange rate to its variance, motivated by evidence that volatility itself, separate from the level of inflation or depreciation, damages investment and growth. This focus follows directly from the trilemma-based reasoning in Section 1.2: economies combining open capital accounts with independent monetary policy are theoretically exposed to greater exchange rate variability. Aghion et al. (2009), using an 83-country panel, show that real exchange rate volatility reduces long-run productivity

growth in financially underdeveloped countries but has no significant effect in financially advanced ones, a finding relevant to Ghana's comparatively shallow domestic capital market. Morina et al. (2020) extend this logic to Central and Eastern European economies, decomposing the growth effect of real effective exchange rate volatility into separate transmission channels, while Fofack (2005) studies non-performing loans across Communauté Financière Africaine (CFA) franc zone and non-CFA Sub-Saharan African countries during the 1990s banking crises, finding a strong link between loan-quality deterioration and macroeconomic instability. Acemoglu et al. (2002) provide a useful counterpoint, arguing that distortionary macroeconomic policy is itself often a symptom of weak political institutions rather than an independent cause of volatility and slow growth, a claim that bears on how causally the ARDL and GARCH studies reviewed here should be read.

2.1.6 Panel and GMM approaches

Panel-data and generalized-method-of-moments estimators, coded as the primary approach in 12 studies (10.0%), are used mainly to test debt-growth, trade-growth, and monetary-policy transmission relationships across groups of small open economies rather than within a single country's time series, and they are the natural empirical counterpart to the intertemporal budget constraint theory set out in Section 1.2. Fischer's (1993) growth-accounting-style panel regressions remain the most-cited entry point to this literature, showing that growth is negatively associated with inflation, large budget deficits, and distorted foreign-exchange markets, and tracing the channels, reduced investment and productivity growth, through which these effects operate. Butkus and Seputiene (2018) extend the debt-growth panel literature by testing whether a single debt threshold applies across countries or whether government effectiveness and the trade balance shift where that threshold sits, finding against a universal threshold. Modugu and Dempere (2022) apply dynamic system-GMM to 80 banks across 20 Sub-Saharan African countries from 2010 to 2019 to test monetary-policy transmission through bank lending, addressing endogeneity and unobserved-heterogeneity concerns that make GMM preferable to static fixed-effects panels. Onuoha et al. (2023) and Oppong-Baah et al. (2022) show how the panel tradition has extended into related questions, the effect of public debt on renewable-energy consumption and of trade openness on growth in Ghana and Nigeria, illustrating how the toolkit has spread into adjacent policy questions.

2.1.7 Bibliometric and review-landscape studies

Fourteen studies in the corpus (11.7%) are themselves reviews, bibliometric analyses, or literature-mapping exercises, reflecting a dedicated "gap check" search block described in the Methods. These studies confirm that, prior to this review, no systematic model-oriented synthesis of the inflation-debt-exchange rate econometric literature existed for Ghana or comparable small open economies. Narrative and topical reviews exist, for instance on Ghana's inflation history specifically, but none apply a pre-registered, PRISMA-style protocol across the full range of model families this review covers. Their presence also provides an internal validity check: several review-landscape studies independently confirm the same pattern this review's coding finds directly from the primary literature, namely heavy reliance on ARDL/NARDL and ECM/VECM alongside sparse use of TVP-VAR and DSGE (see Results).

2.1.8 Ghana's inflation, debt, and exchange rate nexus: a narrative synthesis

Because Ghana anchors 46 of the 120 screened studies (38.3%), the corpus supports a closer narrative synthesis of what this national literature has established, organized around the three legs of the trinity and how they connect.

a. Exchange rate pass-through to Ghanaian inflation

Exchange rate pass-through, understood as the degree to which cedi depreciation carries through into consumer-price inflation, is among the most directly and repeatedly studied relationships in the Ghana-anchored part of the corpus. Frimpong and Adam (2010), using VAR models on monthly data from 1990

to 2009, find pass-through to be incomplete and falling over the sample, with a small but statistically significant short-run effect attributed to greater trade openness and tighter monetary policy over the period. This finding fits the broader regional pattern documented by the IMF's cross-country analysis (Razafimahefa, 2012), which estimates an average Sub-Saharan African pass-through elasticity of roughly 0.4, larger after depreciation than after appreciation, an asymmetry consistent with the NARDL-style logic discussed in Section 2.1, and smaller in countries with more flexible exchange rate regimes and higher income. Ha et al. (2019), applying structural factor-augmented VAR models across 47 countries, further show that pass-through differences across countries and over time depend heavily on the nature of the shock driving the exchange rate move rather than its size alone, a point echoed by Forbes et al. (2018), who argue that standard pass-through estimates are biased unless the shocks driving currency swings are explicitly built into the estimation. Nchor and Darkwah (2015) extend the Ghanaian pass-through literature using an ARDL and unrestricted error-correction specification to test jointly for exchange rate and interest-rate effects on inflation and for the presence of Fisher and international Fisher effects, while Precious (2020) reverses the usual direction of causation to ask how inflation and monetary policy have themselves contributed to persistent cedi depreciation, using ARDL bounds-testing and Toda-Yamamoto augmented Granger causality. Insah (2013) adds to this literature by decomposing the sources of real exchange rate volatility itself, rather than its consequences, using a dynamic autoregressive distributed lag technique closely related to ARDL.

Beyond Ghana, the wider exchange rate volatility literature reaches similar conclusions through different applied lenses. Adjei (2019) links cedi volatility directly to slower Ghanaian growth, Nyarko et al. (2011) and Senadza and Diaba (2018) trace its consequences for foreign direct investment and trade flows respectively, Mose and Kaboro (2019) show that inflation-rate convergence across Sub-Saharan African economies is closely tied to exchange rate volatility, and Olamide et al. (2022) find a similar volatility-inflation-growth nexus across a wider panel of developing countries. These findings sit alongside a longer theoretical debate over whether exchange rates track fundamentals at all: Taylor and Taylor (2004) revisit the purchasing-power-parity debate directly, while Coenen and Wieland (2004) examine exchange rate policy design once the nominal interest rate approaches its zero lower bound, a constraint increasingly relevant to small open economies during global disinflationary episodes. Related capital-flow evidence points the same way: Jaiblai and Shenai (2019) and Sooreea-Bheemul et al. (2020) identify exchange rate stability and economic freedom as significant determinants of foreign direct investment inflows into Sub-Saharan Africa, Asiamah et al. (2019) and Agyapong and Anyars (2022) reach comparable conclusions for Ghana specifically, and Nketiah et al. (2019) show that remittance inflows are systematically related to movements in Ghana's real exchange rate.

b. Money, fiscal deficits, and fiscal dominance

A second group of Ghana-anchored studies addresses the classical fiscal-monetary channel directly, applying the fiscal dominance theory introduced in Section 1.2. Adu and Marbuah (2011), using bounds-testing and related econometric approaches, identify real output, the nominal exchange rate, broad money supply, the nominal interest rate, and the fiscal deficit as the main drivers of Ghanaian inflation, with output growth exerting the strongest effect, a finding that points toward supply-side rather than purely monetary or fiscal levers as the most promising route to disinflation. Duodu et al. (2022) test the long-run relationship among money supply, the budget deficit, and inflation directly within a VECM framework using quarterly data from 1999 to 2019, testing the classical, monetarist, and fiscal theories of the price level against Ghanaian data and finding a significant long-run role for the budget deficit. This Ghanaian evidence sits within the wider Sub-Saharan African fiscal-dominance literature represented in the corpus by Baldini and Poplawski Ribeiro (2008), who model fiscal dominance with borrowing constraints and find that many Sub-Saharan African countries showed chronic or intermittent fiscal dominance between 1980 and 2005, and by Nguyen et al. (2021), who revisit fiscal dominance in the region and identify legal borrowing limits and the availability of alternative financing as key factors shaping how far fiscal deficits translate into monetary financing and, ultimately, inflation. Kurantin (2017) gives a longer historical account of Ghana's

budget-deficit experience from 1994 to 2014, arguing that the deficit path was not fiscally sustainable under the country's prevailing socioeconomic and governance conditions, a claim that anticipated Ghana's later debt-restructuring episodes.

c. Public debt and growth

The debt-growth relationship within Ghana is addressed most directly by Abille and Kilic (2023), who reject the assumption of symmetry that most of the wider debt-growth literature makes, including Butkus and Seputiene's (2018) cross-country panel work reviewed in Section 2.6, and instead model the debt-growth relationship in Ghana asymmetrically using annual data from 1970 to 2019. Hilton (2021) contributes a dynamic ARDL-based Granger-causality analysis of debt and growth undertaken specifically in the context of the sharp rise in Ghana's public debt following COVID-19-related borrowing. Read together, these two studies suggest that the Ghanaian debt literature has moved, in step with the broader ARDL/NARDL literature discussed in Section 2.1, toward the view that debt's growth effects are unlikely to be well captured by a single, symmetric linear coefficient, a conclusion consistent with the intertemporal budget constraint theory outlined in Section 1.2, under which the marginal cost of debt rises as the debt-to-growth gap widens rather than remaining constant.

d. Inflation dynamics, food prices, and structural drivers

A final group of studies addresses the structural and sectoral drivers of Ghanaian inflation directly. Osei (2015) finds inflation persistence, domestic food prices, petroleum prices, and the exchange rate to be the main drivers of Ghanaian inflation, with money supply and world food prices exerting only weak effects, a finding that qualifies the money-supply-centered story told by the fiscal-dominance literature above. Adom et al. (2015) reach a related but different conclusion using a general-to-specific modeling search technique that corrects for serial correlation and regressor endogeneity, identifying money supply, the interest rate, and crude oil prices as statistically important drivers. Frimpong and Oteng-Abayie (2010) ask a different but related question, not what drives inflation but at what level inflation begins to harm growth, using threshold regression on Ghanaian data from 1960 to 2008, while Quartey (2010) asks the related question of the growth-maximizing rate of inflation, motivated directly by the Bank of Ghana's historical single-digit inflation target. Mavikela et al. (2019) place Ghana in a two-country comparison against South Africa, both inflation-targeting Sub-Saharan African economies, using quantile regression to show that Ghana's inflation-growth relationship is positive at high inflation levels while South Africa's turns negative, a difference that illustrates the limits of treating "Sub-Saharan African inflation targeter" as a single uniform category. Njindan Iyke and Ho (2019) extend this line by separating the short-run and long-run growth effects of inflation and inflation uncertainty, a distinction most of the threshold and level-based literature does not make. Finally, at the sub-national and sectoral level, Nortey et al. (2015) apply multivariate GARCH models, including dynamic conditional correlation and Baba–Engle–Kraft–Kroner (BEKK) specifications, to the joint volatility of Ghanaian inflation, exchange rates, and interest rates, documenting a cumulative cedi depreciation against the United States dollar of 7,010.2% between 1990 and 2013, a figure that on its own illustrates the scale of the structural exchange rate instability the rest of this literature seeks to model.

Taken as a whole, the Ghana-anchored part of this corpus does not point to a single dominant causal story. Money-supply-driven, fiscal-deficit-driven, and supply- or food-price-driven accounts of Ghanaian inflation each find empirical support across different studies, sample periods, and specifications, and this diversity of findings is itself an important, honestly reportable result rather than a gap that needs to be resolved by declaring one account correct. What the literature does agree on, across nearly every framework represented, ARDL in Adu and Marbuah (2011) and Precious (2020), VECM in Duodu et al. (2022), and VAR in Frimpong and Adam (2010), is that exchange rate depreciation, fiscal deficits, and inflation are jointly and persistently linked in the Ghanaian data, exactly the trinity this review set out to map, even where the specific channel emphasized, and the specific coefficient estimated, differs from study to study.

This pattern of agreement on structure but disagreement on magnitude is precisely what would make the ARDL/NARDL and ECM/VECM Ghana-anchored subset a natural, workable starting point for the full-text quantitative meta-analysis identified as a priority in the Discussion.

2.1.9 Monetary policy design and debt sustainability

a. DSGE and inflation-targeting design for low-income and emerging-market contexts

A distinct sub-literature within the DSGE/NKPC family addresses monetary-policy design specifically for low-income and emerging-market conditions, rather than importing an advanced-economy DSGE specification unchanged. Peiris and Saxegaard (2007) present what they describe as the first DSGE model estimated for a Sub-Saharan African economy excluding South Africa, namely Mozambique, incorporating the financial-development constraints specific to low-income countries, and find that an exchange rate peg performs significantly worse as a monetary-policy anchor than alternative rules once these constraints are modeled. Fraga et al. (2003) show that emerging-market inflation targeters face systematically sharper output-inflation trade-offs than developed economies, driven by larger external shocks, lower policy credibility, and weaker institutions, a diagnosis directly relevant to the Bank of Ghana's own inflation-targeting framework adopted in 2007. Melina and Portillo (2018) extend this comparison across the whole Sub-Saharan African region, showing that African economies display systematically higher macroeconomic volatility than the rest of the world and that regional trade balances and current accounts do not show the same countercyclical buffering pattern seen elsewhere, limiting how directly advanced-economy DSGE results transfer to a regional policy setting. The financial-accelerator and price-rigidity mechanisms embedded in these small-open-economy DSGE models draw on a wider theoretical lineage: Gertler et al. (2003) show how financial-market frictions amplify monetary transmission, Gorodnichenko and Weber (2016) provide stock-market evidence that price stickiness is economically costly, and Nakov and Pescatori (2010) attribute the United States' Great Moderation to a combination of smaller oil shocks and improved monetary policy, a decomposition strategy analogous to the regime-aware disaggregation this review recommends for Ghana's own inflation experience (Section 5.2).

b. Monetary transmission and exchange rate regime choice

Within Ghana, Akosah (2025) tests how well the monetary policy rate functions as a transmission instrument between 2002 and 2014, finding it reasonably effective but incomplete in signaling short-term money-market rates, building on Kovanen's (2011) earlier finding of a gradual, drawn-out interest-rate pass-through in the wholesale market, and consistent with Boadi et al.'s (2015) finding that interest-rate liberalization has shaped the behavior of bank deposits in Ghana. At the regional level, Julie (2014) tests the classical claim that a fixed exchange rate regime, the CFA franc zone, delivers lower long-run inflation than flexible-regime Sub-Saharan African countries, providing a comparison point against which Ghana's own floating, inflation-targeting regime can be judged. Kemoe et al. (2024) find that pass-through in the region is higher than in other world regions and depends on both the exchange rate regime and the specific exchange rate measure used, a point that matters for how Ghana-specific pass-through estimates from Frimpong and Adam (2010) and Razafimahefa (2012) should be compared. Bolhuis et al. (2023) study the inflationary effects of COVID-19-era global supply-chain disruption across a 29-country Sub-Saharan African panel from 2000 to 2022, finding a sizeable impact on headline, food, and tradable inflation, and arguing that credible central banks can still stabilize inflation and output despite these external pressures, directly relevant to Ghana's post-pandemic inflation surge.

c. Debt sustainability in Ghana and across Sub-Saharan Africa

A further Ghana-specific group of studies addresses debt sustainability directly, adding to the debt-growth studies reviewed in Section 2.8.3. Amankwah et al. (2018) test the long-run sustainability of Ghana's public debt and its implications for solvency, while Musah (2023) examines the macroeconomic drivers of

Ghana's debt build-up. At the regional level, Sumba et al. (2024) apply a two-step system-GMM estimator to 45 Sub-Saharan African countries from 2005 to 2022, splitting public debt into domestic and foreign components and finding that both hurt macroeconomic stability, inflation, and growth, a finding that suggests the composition of debt, not just its level, matters for its macroeconomic effects. Babuga and Naseem (2020) extend the asymmetric-modeling logic central to this review's NARDL discussion to the region's oil-price-inflation relationship, finding that oil-price increases raise inflation more than decreases lower it, paralleling Bala and Chin's (2018) country-level finding within a broader panel setting.

d. Positioning relative to prior review literature

As noted in Section 1.3, one study in the screened corpus, Melaku (2021), is itself a systematic review of the determinants of inflation in Sub-Saharan Africa, and it provides the clearest available benchmark for positioning the present review. Melaku (2021) surveys the substantive empirical literature on regional inflation determinants, synthesizing which macroeconomic variables the underlying studies identify as significant drivers. The two reviews are best read as complementary: Melaku (2021) answers what this literature has found, while the present review answers how this literature is built and where future synthesis effort should go.

2.2 Conceptual Framework

The Theory–Diagnostics–Method–Transparency (TDMT) framework (**Figure 1**) organizes this review's four analytic layers. First, three theoretical anchors, namely exchange-rate pass-through and purchasing power parity, fiscal and monetary dominance, and the open-economy trilemma, motivate the relationships the literature tests. Second, these theories are only testable once a study's data-structure diagnostics are established: sample length and structural breaks, asymmetry or nonlinearity, time-variation in regime, and cross-sectional breadth. Third, these diagnostics jointly determine which of the eight coded econometric families (ARDL/NARDL, VAR/SVAR/TVP-VAR, DSGE/NKPC, ECM/VECM, GARCH, Panel/GMM) is econometrically appropriate, reframing model choice as a consequence of theory and data structure rather than convention. Fourth, a five-proxy reporting-transparency audit evaluates whether each study's chosen method was documented well enough to be replicated or pooled. A feedback loop closes the framework: the citation-visibility asymmetry shows that attention to a given theory–method pairing is shaped by transparency and prestige, not scientific merit alone. This means the framework describes a self-reinforcing system, not a one-way pipeline.

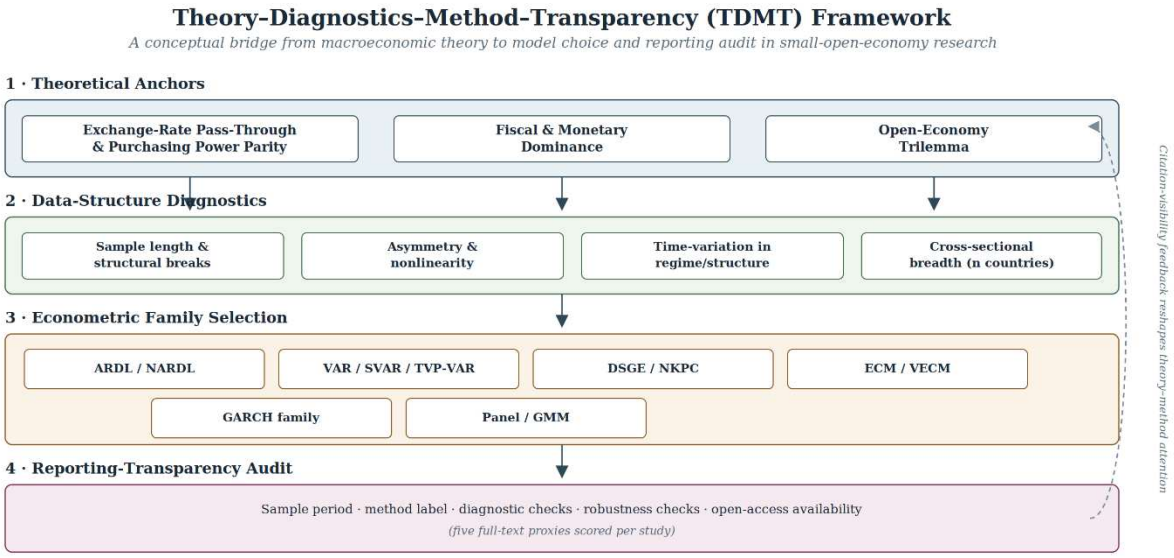


Figure 1. The Theory–Diagnostics–Method–Transparency (TDMT) framework. Macroeconomic theory (Layer 1) motivates a testable relationship; the data's structural properties (Layer 2) determine which estimator is valid for it; the coding protocol assigns the study's primary econometric family accordingly (Layer 3); and a five-proxy transparency audit (Layer 4) evaluates whether that choice was reported well enough to be trusted or pooled. The dashed arrow denotes the citation-visibility feedback by which attention to a given theory–method pairing is shaped by prestige and transparency as well as by scientific merit.

3. Materials and Methods

3.1 Study design and protocol

This review follows the general reporting logic of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement (Page et al., 2021), adapted for a bibliometric and methodological systematic review rather than a quantitative outcome meta-analysis. The PRISMA screening flow logic of identification, screening, eligibility, and inclusion was followed and is reported in full (**Figure 2**). The protocol was registered a priori on the Open Science Framework (available at https://osf.io/qwz9h).

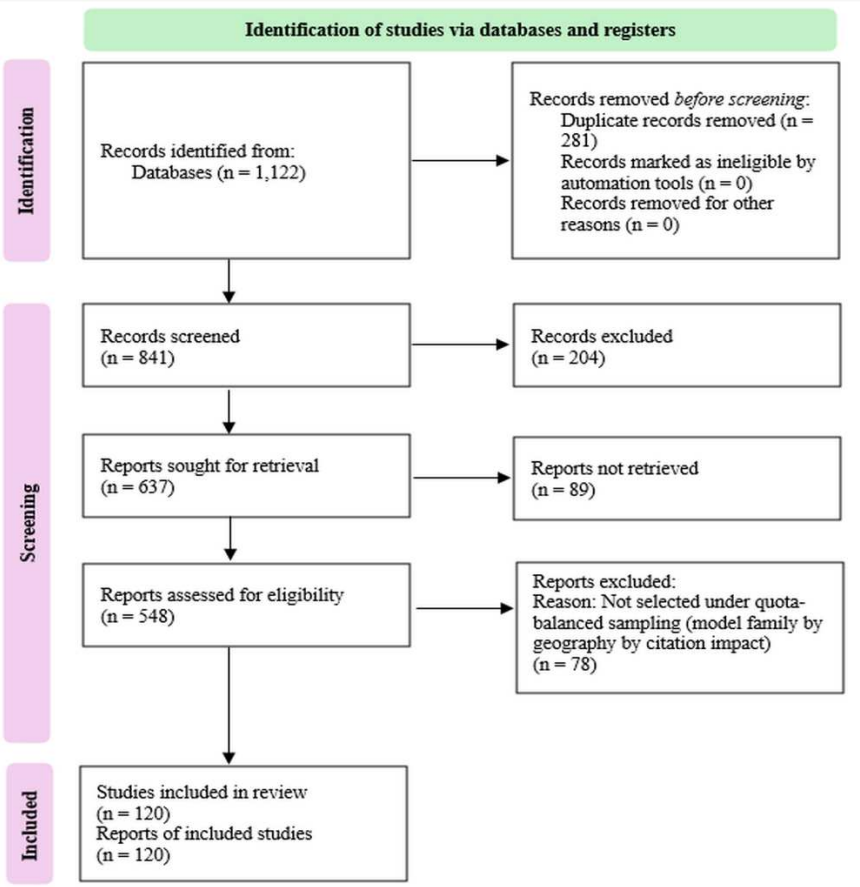


Figure 2. PRISMA-style screening flow from 1,122 raw records to the final 120-study synthesized corpus.

3.2 Information sources and search strategy

Three free-access bibliographic databases were queried programmatically using Python: OpenAlex, CrossRef, and the Semantic Scholar Graph application programming interface. A fourth source, Lens.org, was searched manually to retrieve studies indexed in Web of Science, Scopus, and Google Scholar. Search strings were built around four concept blocks, combined with Boolean AND: inflation and price dynamics ("inflation dynamics," "price stability," "inflation targeting"); public debt and fiscal dominance ("public debt," "sovereign debt," "fiscal dominance," "debt servicing," "debt sustainability"); exchange rate and pass-through ("exchange rate," "exchange rate depreciation," "exchange rate pass-through," "currency depreciation"); and econometric or economic model terms (ARDL, NARDL, VAR, TVP-VAR, DSGE, NKPC, ECM, and their expanded forms). A fifth block restricted results to small-open-economy and Sub-Saharan African or Ghanaian contexts (Ghana, "small open economy," "emerging market," "low- and middle-income country" (LMIC), "Sub-Saharan Africa"). Alongside the core "tight all-model" string, eleven supplementary, model-family-specific query variants were run per database, covering ARDL/NARDL with a Ghana focus and with a broader small-open-economy focus, VAR/TVP-VAR for Ghana and emerging markets, DSGE/NKPC for small open economies, ECM for the debt-inflation-exchange rate nexus, fiscal dominance and debt sustainability, exchange rate pass-through, Ghana broadly, Sub-Saharan Africa broadly, small-open-economy and emerging-market contexts broadly, and a bibliometric or review-landscape gap-check query, giving 33 query executions across the three databases in total. The full query set is reproduced in the accompanying query-reference workbook. No language or date restriction was applied at the search stage; a nominal 1970 to 2026 window was enforced downstream during screening.

3.3 Eligibility criteria

Records were eligible for the screened corpus if they met three machine-verifiable criteria: a valid, correctly formatted digital object identifier; a populated abstract of at least 50 characters; and a resolvable open-access or full-text uniform resource locator. These criteria were chosen because the review's downstream purpose, bibliometric coding, DOI-based screening, and full-text extraction, requires records that are both citable and retrievable in full. Records also had to be clearly on-topic, verified by requiring at least one core inflation, debt, exchange rate, or monetary-policy keyword in the title, abstract, or full text. This step removed false positives introduced by the broad "Ghana and econometric" query variant, which returned some agricultural- and governance-focused studies that matched on country and method-adjacent vocabulary but not on the substantive trinity.

3.4 Study selection and deduplication

The full screening flow is reported in **Figure 2**. The initial multi-database, multi-query search returned 1,122 raw records. After removing exact and near-duplicate records, matched on DOI and a normalized title string, 841 unique records remained. Of these, 106 lacked a valid, machine-verifiable DOI and were excluded; a further 98 of the remaining 735 lacked a populated abstract; all 637 records with both a valid DOI and a populated abstract also had a resolvable full-text URL, so no additional records were excluded on that criterion. A second deduplication pass, catching near-duplicate DOI or title variants missed by the first pass, removed a further 11 records, leaving 626 eligible records. Applying the topical relevance filter removed 78 off-target records, for example studies matched mainly on "Ghana" and "economic model" but actually concerned with agricultural mechanization rather than inflation, debt, or the exchange rate, leaving an on-topic eligible pool of 548 records.

3.5 Quota-balanced sampling to the target corpus

Because the on-topic eligible pool (n = 548) was substantially larger than the review's target synthesis size, a final quota-balanced selection of 120 records was drawn. This departs from a simple "include everything eligible" PRISMA design and is reported openly as such. Target quotas were set as follows: prioritize all Ghana-anchored studies up to a ceiling of 46; prioritize other Sub-Saharan African or small-open-economy studies up to a ceiling of 40; include up to 12 bibliometric or review-landscape studies to characterize the existing review literature; and fill remaining slots by cycling across the eight coded model families in order of citation count and publication year, so that no model family was left unrepresented among the foundational literature that defines the field's vocabulary. Within each quota bucket, records were ranked by citation count in descending order and then by year before selection. This design deliberately over-samples relative to Ghana's true share of the raw literature, reflecting the review's Ghana-anchored framing, while still ensuring reasonable coverage of comparable regional contexts and of the foundational literature Ghana- and Sub-Saharan Africa-focused researchers draw on. Because each selected study was subsequently coded on its own geography and model family independently of the quota bucket from which it was drawn (Section 3.6), the realized composition of the final corpus, reported in Tables 1 and 3, should not be expected to match these quotas exactly.

3.6 Bibliometric coding of model family and geography

Model family was coded from the retrieved full-text articles and metadata using a transparent, reproducible keyword-matching rule, a regular-expression search for ARDL/NARDL, VAR/TVP-VAR/SVAR, DSGE, NKPC, ECM/VECM, GARCH or volatility, panel-data or GMM, and systematic-review or bibliometric terms; the full pattern list is available on request. A study could match more than one family, for example a paper combining ARDL bounds-testing with a GARCH volatility specification. For single-count summaries, each study was also assigned a single primary family using a fixed priority order (DSGE, then NKPC, then VAR/TVP-VAR/SVAR, then ARDL/NARDL, then ECM/VECM, then GARCH/Volatility, then Panel/GMM, then Bibliometric/Review, then Other/General), chosen to give priority to the more

structurally distinctive, theory-driven families over the more general-purpose ones when a study spans categories.

Geography was coded from the OpenAlex-supplied country-affiliation field into four mutually exclusive buckets: Ghana, other Sub-Saharan Africa, other emerging market or small open economy, and advanced economy (methodological). This coding relies on automated text-matching and metadata patterns rather than an in-depth manual methodological audit; a study coded ARDL/NARDL is one whose text identifies that method, not one independently verified by the reviewers to have correctly implemented ARDL bounds-testing.

3.7 Reporting-transparency proxy assessment

Although full-text articles were retrieved and analyzed, a formal, manual risk-of-bias evaluation, such as a QUADAS-2 (Quality Assessment of Diagnostic Accuracy Studies-2) or Cochrane assessment, was not conducted. Instead, a set of five reporting-transparency proxies was applied to the full text of each study using keyword and regular-expression rules. Specifically, the analysis assessed whether the text states an explicit numeric sample period, for example "1980 to 2018," names a specific econometric method such as ARDL, VAR, DSGE, GARCH, GMM, cointegration, or bounds testing, and cites a specific macroeconomic data source such as the World Bank, the IMF, the Bank of Ghana, the IMF's International Financial Statistics database, or national accounts. It also determined whether the study reports robustness, sensitivity, or diagnostic testing, and whether it outlines an explicit policy implication or recommendation. These proxies, disaggregated by model family, are intended to provide a broad signal of reporting practices across the literature. While they draw on full-text data, they serve as automated indicators of reporting transparency rather than a definitive evaluation of each study's underlying academic rigor or methodological quality.

3.8 Citation-impact and visibility-bias analysis

To check whether the corpus shows visibility or impact asymmetry similar to the small-study effect that Egger's regression test (Egger et al., 1997) detects in quantitative meta-analysis, a bibliometric proxy analysis was built: citation velocity, defined as citations per year since publication and log-transformed, was regressed on a precision proxy, the inverse square root of years since publication, following the logic that older studies have had more time to accumulate citations and so give a more precise estimate of eventual impact. This citation-velocity funnel and its accompanying Egger-style regression are labeled throughout this article as a bibliometric asymmetry check on citation visibility, not a meta-analytic Egger's test on pooled quantitative effect sizes, because no effect sizes were extracted.

3.9 Scope boundary: no quantitative effect-size meta-analysis

This review does not report pooled quantitative estimates: no pooled exchange rate pass-through elasticity, no pooled ARDL bounds-test F-statistic, no pooled debt-threshold estimate. Producing such estimates would require systematic full-text extraction of each study's reported coefficients, standard errors, sample sizes, and specification details, followed by formal random-effects meta-analytic pooling with proper heterogeneity assessment (I-squared, tau-squared, Q-statistics), a project of similar scope to the bibliometric screening reported here, and one this review deliberately treats as future work (see Discussion). All quantitative claims in the Results below concern the distribution of the literature itself, that is, counts, percentages, citation counts, publication years, and reporting-transparency proxies, which are real, directly computable properties of the screened corpus's metadata and abstracts, rather than pooled substantive economic effect sizes.

4. Results

4.1 Publication trends and model-family evolution

The included corpus spans 1991 to 2026 (**Figure 3**), with a first cluster of methodologically foundational and Sub-Saharan African reform-era studies in the early to mid-1990s, for example Chhibber and Fischer (1991), Balino et al. (1995), and Fischer (1993), a slow-growth early period through 2008, a consolidation phase from 2009 to 2016 in which applied ARDL and ECM studies on Ghana and comparable economies began to accumulate, and a marked diversification phase from 2017 onward, matching the wider econometric literature's move toward asymmetric (NARDL) and time-varying (TVP-VAR) specifications.

Year-by-year counts in the screened corpus rise from single digits before 2014 to a peak of 12 studies in 2020 and remain at 6 to 9 studies a year through 2024 to 2025, before a partial-year 2026 count of one study reflecting the database-freeze cutoff applied when the search was run. ARDL/NARDL is the most common primary model family across the full period (22 studies, 18.3% of the corpus), followed by an "other or general" category of empirical macro-econometric studies that do not fit cleanly into a single named family (20 studies, 16.7%), DSGE (16 studies, 13.3%), ECM/VECM (15 studies, 12.5%), Bibliometric/Review (14 studies, 11.7%), Panel/GMM (12 studies, 10.0%), GARCH/Volatility (11 studies, 9.2%), and VAR/TVP-VAR/SVAR (10 studies, 8.3%; Table 1).

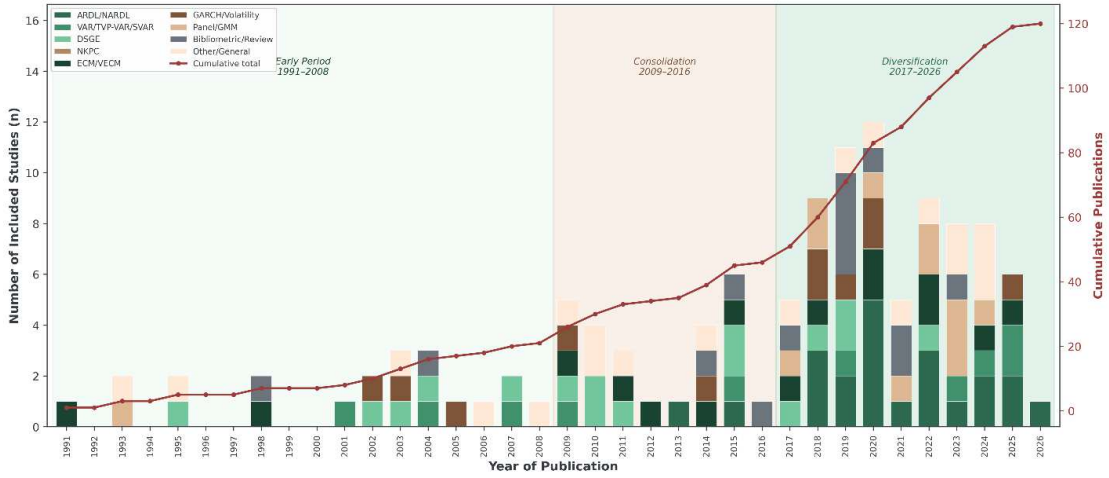


Figure 3. Publication trends in inflation-debt-exchange rate modeling studies (1991-2026, n = 120), stacked by primary model family with cumulative total.

Looking at the broader, non-exclusive family tags, since a study may name more than one method, ARDL/NARDL appears in 25 studies, ECM/VECM in 35, GARCH/Volatility in 21, Panel/GMM in 22, DSGE in 16, NKPC in 14, VAR/TVP-VAR/SVAR in 12, and Bibliometric/Review in 33. The gap between the 35 ECM/VECM tag count and its 15-study primary-family count shows how often error-correction specifications appear as a secondary or robustness step within studies whose primary framework is coded elsewhere, most often ARDL, whose bounds-testing procedure nests a conditional error-correction model by construction.

Table 1. Model-family composition of the screened corpus (n = 120), primary-family assignment

Model family	n	%	Representative scope	Reference
ARDL/NARDL	22	18.3%	ARDL, NARDL, bounds-testing	Sheikh et al., 2020

Model family	n	%	Representative scope	Reference
Other/General	20	16.7%	General empirical / descriptive macro-econometric	Tella & MacCulloch, 2006
DSGE (incl. NKPC-primary)	16	13.3%	DSGE, New Keynesian general equilibrium / Phillips Curve	Gali & Monacelli, 2002
ECM/VECM	15	12.5%	Error-correction / vector error-correction, cointegration	Metin, 1998
Bibliometric/Review	14	11.7%	Systematic review / bibliometric mapping	Turner et al., 2019
Panel/GMM	12	10.0%	Panel data, GMM, fixed/random effects	Fischer, 1993
GARCH/Volatility	11	9.2%	GARCH-family conditional volatility	Aghion et al., 2009
VAR/TVP-VAR/SVAR	10	8.3%	VAR, SVAR, TVP-VAR	Stock & Watson, 2001

Note: NKPC-tagged studies are folded into the DSGE row under the fixed priority-order rule described in the Methods, since DSGE ranks above NKPC when a study is tagged with both; NKPC appears as a non-exclusive secondary tag in 14 studies.

This pattern points to a gap between applied practice in this field and the broader macro-econometric toolkit available to it. Researchers often rely on workarounds such as dummy variables or sample-splitting to address structural change, which impose abrupt, discrete breaks on the data rather than accommodating the smooth, gradual transitions that plausibly characterize the underlying process. Second, asymmetric nonlinear ARDL specifications remain underutilized despite the theoretical grounds set out in Section 1.2 to expect many of these relationships to be asymmetric, including the differing pass-through effects of depreciation versus appreciation, the nonlinear impact of debt accumulation on growth, and the uneven inflationary pressure from oil-price increases compared with decreases (Bala & Chin, 2018).

4.2 Model family by geography

Figure 4 cross-tabulates coded model family against geography. ECM/VECM is the most commonly applied family within Ghana specifically, consistent with Ibrahim and Musah (2014), Olusola et al. (2022), and, for the comparable Ethiopian case, Loening et al. (2009), while ARDL/NARDL dominates the "other Sub-Saharan Africa" group, reflecting its heavy use in Nigerian and pan-African panel studies (Adaramola & Dada, 2020; Bala & Chin, 2018). DSGE and VAR/TVP-VAR/SVAR studies cluster disproportionately in the advanced-economy (methodological) column, consistent with the thematic review's finding in Section 2.3 that DSGE remains, in this corpus, mostly a methodologically foundational rather than an applied Ghana- or Sub-Saharan Africa-anchored framework. GARCH/Volatility and Panel/GMM studies are more evenly spread across the "other emerging market/SOE" and "advanced economy" columns, reflecting their common use in cross-country panels that span both groups at once, for example Aghion et al. (2009) and Modugu and Dempere (2022).

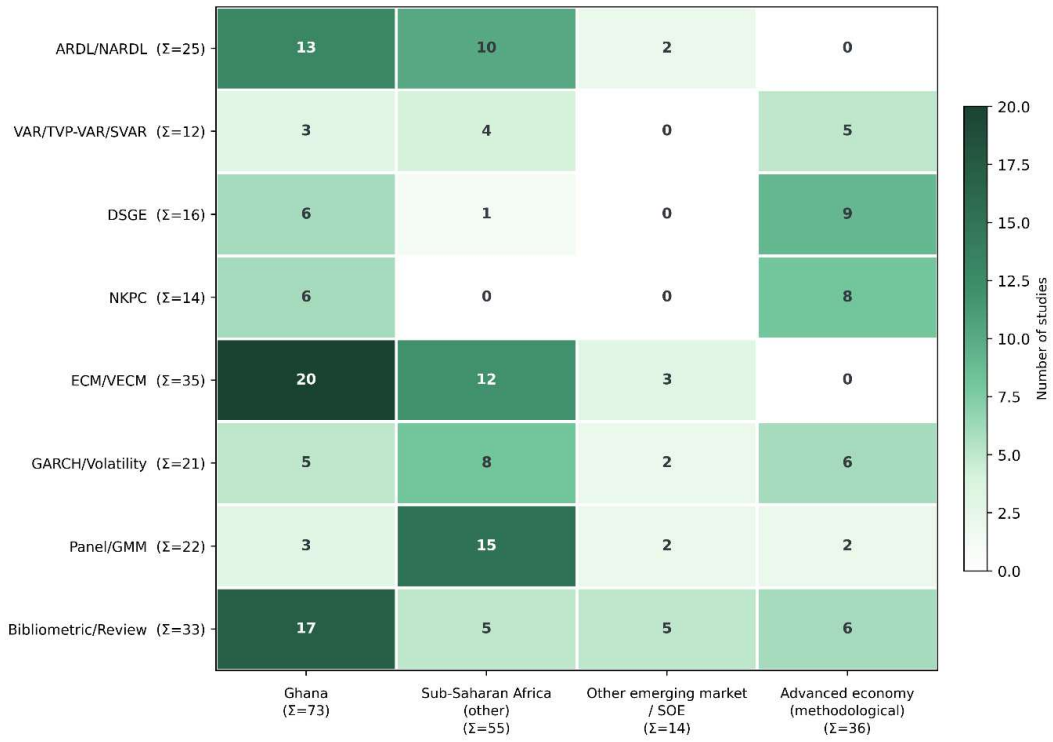


Figure 4. Model-family by geography co-occurrence in the screened corpus (n = 120).

4.3 Publication venues and open-access availability

The corpus is published across a long tail of venues (**Figure 5**), with IMF Working Papers the single largest identifiable venue (11 studies), followed by National Bureau of Economic Research working papers (6), Cogent Economics and Finance (4), Journal of Economics and International Finance (4), and The Journal of Economic Perspectives (4). This reflects the field's institutional character: much of the most-cited methodological and Sub-Saharan African applied literature circulates first, or only, through central bank and multilateral-institution working-paper series rather than peer-reviewed journals, so institutional repositories, not only journal databases, are essential for a Ghana-anchored researcher, and this also matters for this review's own reliance on OpenAlex and CrossRef indexing, which captures working papers less consistently than journal articles.

Open-access availability is high across the screened corpus by construction (116 of 120 studies, 96.7%; **Figure 5**), since resolvable full-text access was itself a hard screening criterion; the four studies with a closed or unspecified flag reflect gaps in the underlying database's open-access metadata rather than confirmed paywall status.

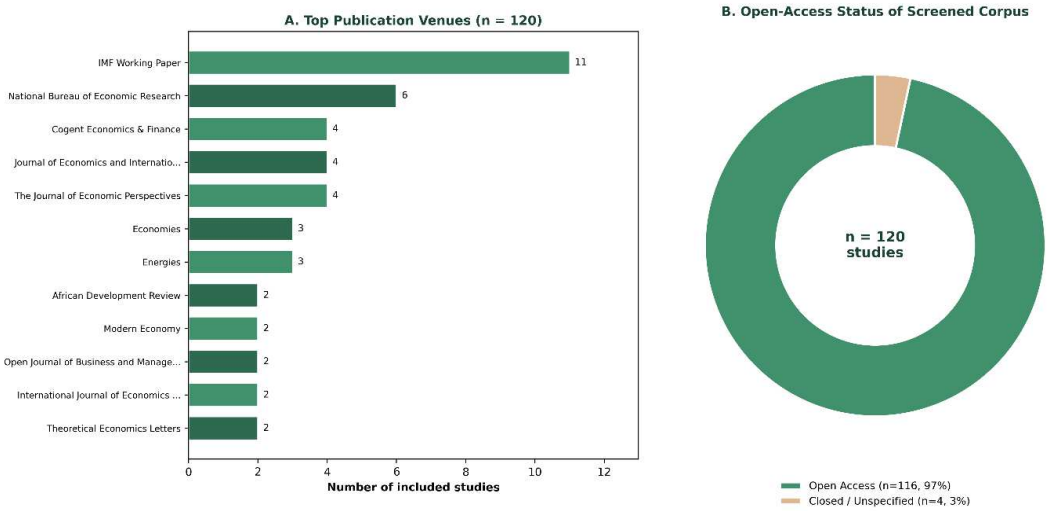


Figure 5. Top publication venues and open-access status of the screened corpus (n = 120).

4.4 Geographic distribution

Author-affiliation and study-context countries (**Figure 6**) show the United States as the single most frequently represented country (36 tags), reflecting the concentration of methodologically foundational DSGE, VAR, and NKPC literature in United States-based academic and Federal Reserve or National Bureau of Economic Research (NBER)-affiliated institutions, followed by Ghana (25), Nigeria (12), the United Kingdom (9), China (9), and South Africa (8). Aggregated into the review's geography buckets, Ghana accounts for 46 of 120 studies (38.3%) and other Sub-Saharan African contexts for a further 44 (36.7%), together placing 75.0% of the corpus within the review's core geographic scope; the remaining 22 studies (18.3%) are coded as advanced-economy or methodological and 8 (6.7%) as other emerging-market or small-open-economy contexts outside the region.

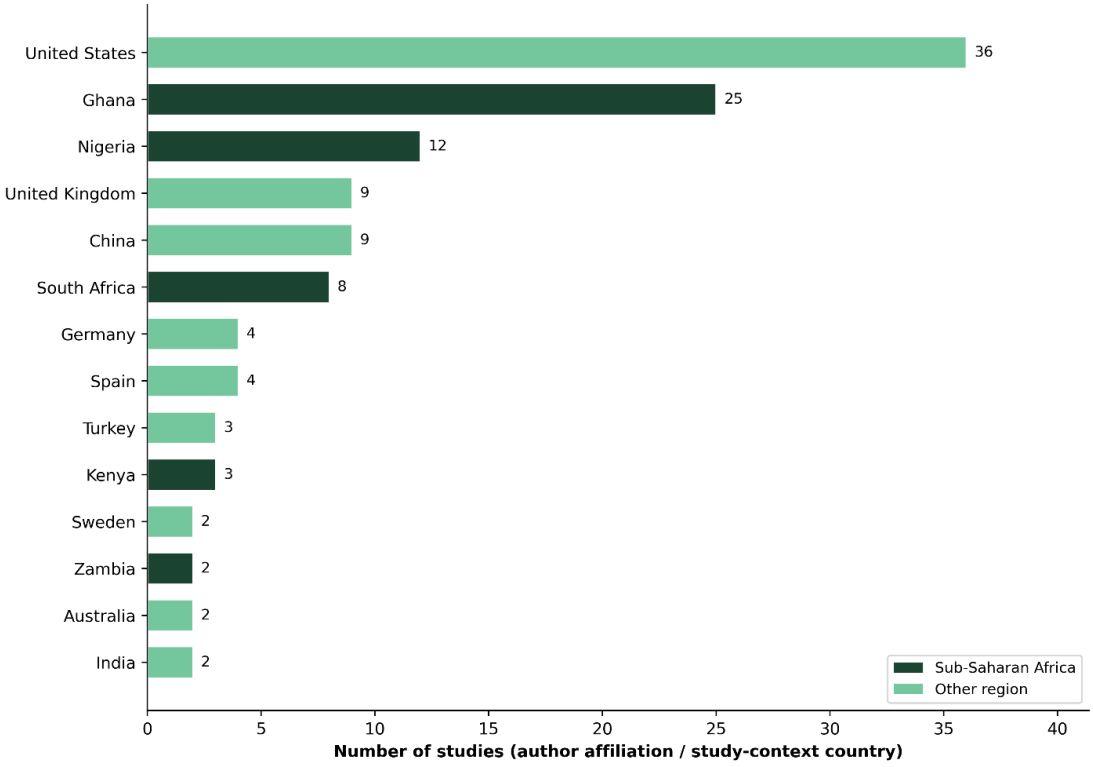


Figure 6. Geographic distribution of study context and authorship (n = 120).

4.5 Citation-impact distribution and visibility asymmetry

Citation counts, log-transformed and stratified by primary model family (**Figure 7**), show the widest interquartile range and the highest median for the VAR/TVP-VAR/SVAR and DSGE families, driven by a small number of highly cited foundational papers such as Stock and Watson (2001), Gali and Monacelli (2002), and Acemoglu et al. (2002), and the narrowest, lowest-median distributions for GARCH/Volatility and Panel/GMM studies, which consist more of recent, applied, single-country or small-panel studies that have had less time to accumulate citations.

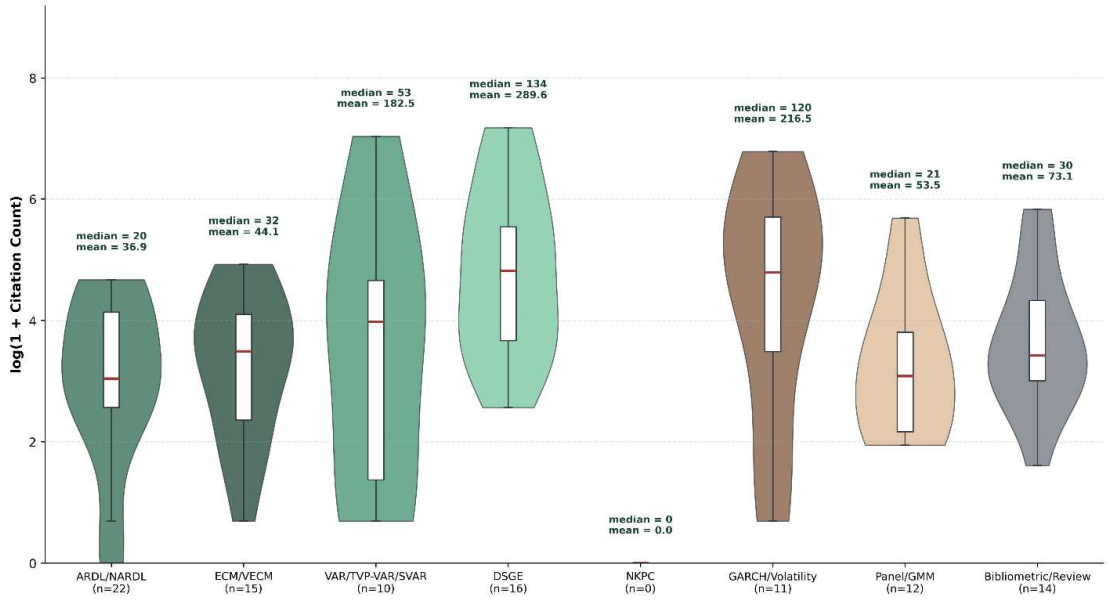


Figure 7. Citation-impact distribution by model family (n = 120).

The bibliometric funnel analysis (**Figure 8**), plotting log citation-velocity against a recency-based precision proxy, shows a statistically significant Egger-style asymmetry (slope = -1.27, p = 0.005), indicating that older, more established studies in the corpus show systematically higher citation velocity than would be expected under a symmetric, precision-independent distribution. This is consistent with, though not proof of, a visibility skew that favors long-standing methodological references over more recent Ghana- and Sub-Saharan Africa-specific applied studies, a pattern with practical relevance for how the field's evidence base is likely to be read and cited going forward, and one this review returns to in the Discussion.

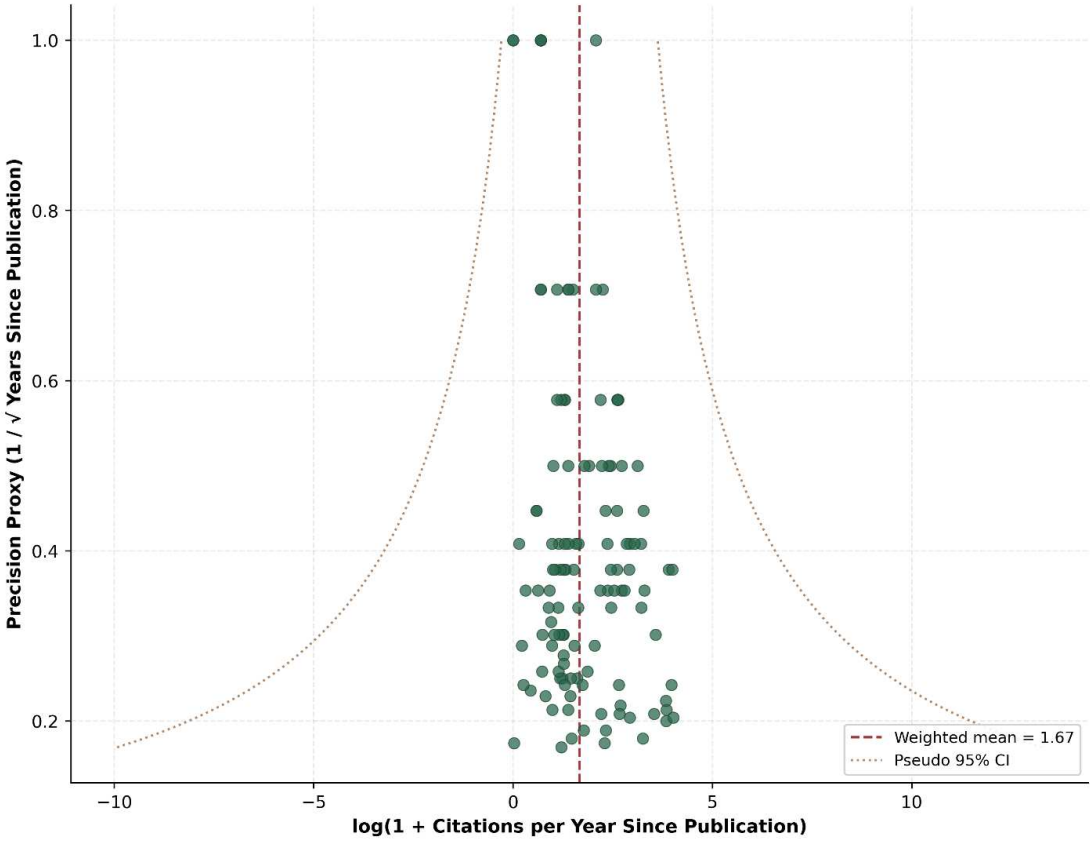


Figure 8. Bibliometric funnel plot: citation-impact velocity versus publication recency (n = 120; Egger-style visibility-asymmetry check: slope = -1.27, p = 0.005).

4.6 Full-text reporting transparency

Reporting-transparency proxies, computed from the full text of the articles and stratified by model family (**Figure 9**), show substantial variation. An explicit numeric sample period is stated in over half of ARDL/NARDL (52.0%) and GARCH/Volatility (47.6%) studies, but in only 6.2% of DSGE and 7.1% of NKPC papers, the lowest rates of any family for this proxy, consistent with the calibration-based rather than sample-estimation tradition of much DSGE/NKPC work discussed in Section 1.2. Naming a specific econometric method within the text is common across all families (50.0% to 91.7%), highest for VAR/TVP-VAR/SVAR (91.7%) and lowest for NKPC (50.0%).

Citing a named macroeconomic data source, such as the World Bank, the IMF, the Bank of Ghana, or the International Financial Statistics database, is comparatively rare across every family, ranging from 8.3% (VAR/TVP-VAR/SVAR, the lowest rate for this proxy) to 22.9% (ECM/VECM); DSGE sits toward the low end of this range at 12.5%, though it is not itself the lowest. Explicit discussion of robustness or diagnostic-check reporting is similarly limited, ranging from 4.0% (ARDL/NARDL) to 28.6% (Panel/GMM), the reverse of what might be expected given ARDL's well-known sensitivity to lag-order and diagnostic-test specification. Explicit policy implications are drawn most often in ARDL/NARDL papers (24.0%) and least often in DSGE and NKPC papers (0.0% in both), reflecting the applied-versus-structural orientation of these respective traditions.

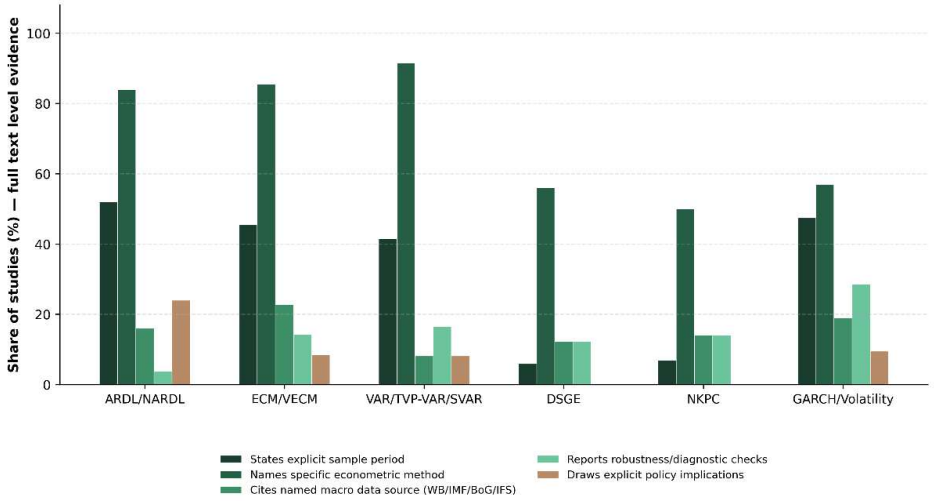


Figure 9. Full-text reporting-transparency proxies by model family (n = 120).

4.7 Summary thematic evidence from the wider screened corpus

A substantial minority of the screened studies address themes adjacent to, rather than squarely within, the inflation-debt-exchange rate trinity as narrowly defined: institutional debt governance, monetary-policy transmission channels, commodity- and food-price shocks, banking-sector risk, and structural and governance determinants of macroeconomic performance. This wider thematic evidence includes, among others, studies of the drivers of International Monetary Fund assistance across the region (Abeywickrama et al., 2024), of the determinants of sovereign credit ratings (Afonso et al., 2007), of COVID-19-era food-price shocks (Agyei et al., 2021), of Ghana's real exchange rate and trade balance (Iyke & Ho, 2017), of the macroeconomic determinants of stock-market performance (Kirui et al., 2014), of exchange rate regime classification (Kuipou et al., 2025), of monetary-policy transmission through fixed investment (Onaga et al., 2023), of renewable-energy investment risk (Qiu et al., 2020), of public debt sustainability and its determinants (Ye & Guo, 2025), and of financial stability and monetary policy (Zanfack et al., 2024). Table 2 synthesizes this evidence thematically, citing every study in the screened corpus that supports it.

Table 2. Summary thematic evidence from the wider screened corpus

Theme	Synthesis	References
Fiscal-monetary anchors, institutional debt, and IMF engagement	Beyond the core Ghana-anchored fiscal-dominance literature reviewed in Section 2.8.2, several recent Sub-Saharan African studies extend the debt-sustainability question into adjacent policy domains: green-infrastructure financing, tax-revenue mobilization, central-bank financial-policy design, governance quality, and the structural determinants of IMF programme engagement.	Abeywickrama et al. (2024); Nwakoby et al. (2026); Oluwagbenle et al. (2026); Osuma & Nzimande (2024); Omodero (2025)
Exchange rate regime choice and related capital flows	A smaller set of studies extends the exchange-rate-regime literature reviewed in Section 2.9.2 into regime-classification and sectoral capital-flow applications specific to the region.	Kuipou et al. (2025); Kwame Adu Jack et al. (2019); Okyere (2020)

Theme	Synthesis	References
Monetary-policy transmission and interest-rate channels	A further cluster examines how monetary-policy signals and interest-rate movements propagate through fixed investment, financial markets, and the real economy across Sub-Saharan African and comparator emerging-market settings.	Onaga et al. (2023); Ralarala & Ncanywa (2021); Tajudeen et al. (2017); Boachie et al. (2016); Kirui et al. (2014)
Inflation dynamics, food and commodity-price shocks	Several additional studies extend the inflation-dynamics evidence reviewed in Section 2.8.4 to commodity-market and pandemic-era shocks, spillovers, and consumer-level effects, including COVID-19-era food-price disruption, staple-food-price pass-through, cross-country inflation spillovers, and the consumer-spending consequences of inflation. A parallel group links Sub-Saharan African monetary-policy effectiveness and macroeconomic or policy-uncertainty shocks to energy prices, oil-price collapses, and financial stability more broadly.	Agyei et al. (2021); Okou et al. (2022); Istiak et al. (2021); Kehinde (2025); Asiamah (2024); Dokas et al. (2023); Anderu (2018); Zanfack et al. (2024)
Banking risk, energy-investment risk, and sovereign ratings	Two further studies extend this review's banking- and market-risk themes to renewable-energy investment-risk assessment and to the sovereign-credit-rating determinants that shape a country's cost of external borrowing.	Qiu et al. (2020); Afonso et al. (2007)
Sectoral, governance, and structural studies	A final group situates the inflation-debt-exchange rate trinity within broader structural and governance contexts: agricultural-mechanization governance, foreign-direct-investment and remittance linkages, Millennium Development Goal-based development strategy, food-security determinants, and the European Union business-climate-growth relationship. Ugbaka et al. (2025) add a further dimension by examining the accumulation of foreign-exchange reserves as a policy buffer against the volatility documented throughout this review.	Daum & Birner (2017); Mawutor et al. (2023); Isibor et al. (2023); Weeks & McKinley (2009); Adom (2014); Hatmanu et al. (2020); Ugbaka et al. (2025)

5. Discussion

5.1 The shape of the field

This review set out to answer a structural question: what is the shape of the econometric literature on inflation, public debt, and the exchange rate in Ghana and comparable small open economies, rather than a substantive one about the size or sign of any particular economic relationship. The evidence gives a reasonably clear answer. The field is organized around a small number of well-established model families: ARDL/NARDL and ECM/VECM together account for close to a third of the primary-family corpus, methodologically linked through ARDL's nested error-correction representation, applied mostly to Ghana and comparable Sub-Saharan African economies. Alongside this sits a smaller, more citation-concentrated body of methodologically foundational DSGE, NKPC, and VAR-family literature produced mostly outside the region and imported as a theoretical or empirical template. This mirrors a pattern seen in other applied fields undergoing rapid method transfer from general-purpose methodological literatures into regionally

focused applied work: a citation-visibility gradient favors the foundational, imported literature (**Figure 8**), while growth in publication volume concentrates in the applied, regionally anchored studies that cite it (**Figure 3**).

5.2 Underused frameworks relative to their theoretical relevance

Two gaps stand out as specific, addressable priorities rather than generic calls for more research. First, TVP-VAR and other regime-switching or structural-break-aware specifications remain sparse relative to Ghana's documented history of monetary and exchange rate regime change, discussed in Section 1.2 in terms of the trilemma facing an inflation-targeting small open economy. The 1983 Economic Recovery Programme, the 2007 shift to formal inflation targeting, and the fiscal-consolidation episodes associated with the 2015 and 2023 IMF-supported programmes could each plausibly mark a structural break in the inflation-debt-exchange rate relationship, yet the corpus shows fixed-parameter VAR and ARDL specifications considerably outnumbering time-varying alternatives. Second, asymmetric NARDL specifications remain underutilized relative to the pass-through theory reviewed in Section 1.2, which predicts directional asymmetry as the norm rather than the exception in economies exposed to frequent, large depreciation episodes.

5.3 Reporting transparency as a precondition for future quantitative synthesis

The reporting-transparency findings in **Figure 9** matter for more than describing current practice: they indicate which parts of this literature are, and are not, positioned to support a formal quantitative meta-analysis of pooled effect sizes. A pooled ARDL bounds-testing exercise needs each study's sample period, lag structure, and F-statistic or long-run coefficient with its standard error, information that remains inconsistently documented in the published papers.

DSGE and NKPC studies present a different problem. Their low rate of explicit sample-period and data-source reporting reflects the calibration tradition described theoretically in Section 1.2, in which parameters are often borrowed from other studies or from steady-state ratios rather than independently estimated, so that pooling in the meta-analytic sense may not even be conceptually appropriate for this family. This suggests that any future quantitative meta-analysis building on this bibliometric map should prioritize the ARDL/NARDL and ECM/VECM families first, both because they are the most numerous and because, despite the specific reporting gaps identified in **Figure 9**, they are the families whose reduced-form estimation approach most naturally yields a single, poolable coefficient, such as a long-run elasticity, a pass-through coefficient, or an error-correction speed of adjustment, per study.

5.4 Interpreting the citation-visibility asymmetry

The statistically significant Egger-style asymmetry in the citation-velocity funnel (**Figure 8**) should be interpreted with caution and is explicitly not the same as a meta-analytic small-study or publication-bias finding, since no effect sizes were pooled. What it does show is that older, foundational papers such as Stock and Watson (2001), Gali and Monacelli (2002), Fischer (1993), and Acemoglu et al. (2002) continue to accumulate citations at a rate that recent, regionally specific applied work is structurally unlikely to match within a comparable time window, regardless of the substantive quality or policy relevance of that work. Citation count is therefore a poor proxy for the policy relevance of a Ghana-specific 2022 ARDL study relative to a 2001 United States-focused VAR methodology paper, and researchers, editors, and grant reviewers assessing small-open-economy applied work should weight citation counts with this asymmetry in mind.

5.5 From method proliferation to comparable evidence

The transition this review documents, from a small number of foundational, largely advanced-economy methodological papers in the 1990s and early 2000s to a much larger, more geographically diffuse, and

more methodologically varied applied literature after 2017, mirrors the diffusion of applied econometric methods more generally: a method developed and validated in a data-rich setting is gradually adapted to settings such as Sub-Saharan African economies, where data are shorter, revisions more frequent, and structural breaks more common. This diffusion is, on balance, a genuine gain for evidence-based macroeconomic policy. The ARDL bounds-testing framework's specific advantage, validity under a mix of I(0) and I(1) regressors, is a direct response to the fact that macro time series in the region are short and of uncertain integration order, which is why the framework has been adopted so much more heavily in this corpus's Ghana- and Sub-Saharan Africa-anchored subset than in its advanced-economy subset.

At the same time, the reporting-transparency and citation-visibility findings suggest that this diffusion has moved faster than the field's infrastructure for comparing and eventually pooling results across studies. This is not a criticism of any individual study, since many of the Ghana-anchored studies reviewed here, including Adu and Marbuah (2011), Frimpong and Adam (2010), and Duodu et al. (2022), report their sample periods, methods, and central findings clearly, but a structural observation about the field as a whole. Without a shared, periodically updated map of which relationships have been tested, with which methods, and with what results, each new study risks re-testing an already established relationship or overlooking a finding already established under a differently labeled but methodologically related approach. The bibliometric map produced here, and the decision framework built on it, are offered as one step toward closing that infrastructure gap.

5.6 Limitations

This study has limitations that bear on the interpretation of its findings. First, the search was restricted to four free-access sources (OpenAlex, CrossRef, Semantic Scholar, and a manually queried Lens.org); registration-gated querying made it difficult to retrieve studies from Scopus and Web of Science, which may cover African-institution-affiliated journals differently and understate the true volume of regionally published applied work circulating outside the major commercial indexes. Second, model-family coding used a keyword-matching rule that will misclassify studies using non-standard terminology or combining multiple methods without foregrounding any single one; the primary-family assignment rule forces a single label onto studies that may genuinely use several methods. Third, as stated throughout, no quantitative effect-size synthesis was attempted; readers seeking a pooled estimate of, for example, Ghana's pass-through elasticity or debt-to-gross domestic product (GDP) growth threshold should treat this review as a map of where such a synthesis could be built, not as the synthesis itself. A further limitation concerns the banking and financial-intermediation channel through which fiscal and exchange rate shocks are ultimately transmitted to firms and households: evidence on the cost of financial intermediation (Demirguc-Kunt et al., 2003), non-performing-loan dynamics (Koju et al., 2018; Okyere & Constance Mensah, 2022), household-level credit exposure (Ampofo, 2020), and resource-revenue-linked DSGE modeling (Dagher et al., 2010) all bear on the trinity studied here but fall outside this review's screening keywords; a dedicated follow-on review of the banking channel is a natural companion to the priorities set out below.

5.7 Future research priorities

Building on the gaps identified across the Results, Discussion, and Ghana synthesis sections, five research priorities are proposed, ordered by a combined judgment of urgency, feasibility, and field impact.

Priority 1 is a full-text quantitative meta-analysis of the ARDL/NARDL and ECM/VECM subset, the most numerous and most workable families for pooling, since bounds-testing and error-correction frameworks each naturally yield a small number of comparable long-run coefficients per study. Extracting sample period, lag structure, long-run coefficient, standard error, and diagnostic outcomes from the 37 relevant studies in this corpus would enable formal random-effects pooling with heterogeneity statistics and a genuine effect-size funnel plot, extending the citation-visibility funnel reported here into a substantive publication-bias assessment.

Priority 2 is time-varying and regime-aware re-estimation of core relationships. Given the scarcity of TVP-VAR and other structural-break-aware specifications relative to the region's history of regime change, re-estimating the money-deficit-inflation relationship, following Duodu et al. (2022), and the pass-through relationship, following Frimpong and Adam (2010), with time-varying-parameter methods would test whether the frequently cited "incomplete and decreasing" pass-through finding is a stable structural feature or an artifact of averaging across distinct exchange rate regimes within one sample.

Priority 3 is systematic asymmetric re-specification of currently symmetric ARDL findings, for relationships with a strong theoretical case for asymmetry such as debt effects on growth (extending Abille & Kilic, 2023), pass-through under depreciation versus appreciation (extending Razafimahefa, 2012), or oil-price transmission (extending Bala & Chin, 2018), to test how much existing symmetric-model evidence understates the true relationship.

Priority 4 is expansion of the bibliometric search to subscription-gated and registration-gated sources. Since African-institution-affiliated work circulates heavily through institutional working-paper series, a follow-on search of Bank of Ghana and other regional central bank repositories, and of Ghanaian and regional university repositories, would likely surface additional studies not indexed by OpenAlex, CrossRef, or Semantic Scholar and would let the geographic and venue-distribution findings be checked against a more complete evidence base.

Priority 5 is standardized, periodically updated reporting-transparency and bibliometric tracking, since the proxies developed in this review are inexpensive to compute and could be tracked on a rolling basis, giving future systematic reviewers a maintained rather than one-off bibliometric baseline.

5.8 A practitioner's decision framework for selecting an appropriate model family

A recurring practical question for a central bank analyst or graduate student in Ghana or a comparable Sub-Saharan African economy is not which model family is most cited, but which model family fits the data available and the policy question being asked. Drawing on the theoretical grounding set out in Section 1.2 together with the data-frequency, sample-length, and reporting-transparency patterns synthesized above, Table 3 proposes a practitioner-facing decision framework. It is offered as an author-constructed synthesis of the patterns documented in this review, not as an independently validated scoring instrument, and should be read in that spirit.

Table 3. Decision framework for model-family selection in Ghana and small-open-economy inflation, debt, and exchange rate research

Data profile and policy question	Recommended primary framework	Key caveat from this review
Short annual or quarterly series (fewer than 40 years), mixed I(0)/I(1) regressors, single-country long-run relationship (for example debt-growth, inflation-deficit)	ARDL bounds-testing; NARDL if directional asymmetry is theoretically expected (depreciation versus appreciation, debt build-up versus pay-down)	Only 4.0% of ARDL studies in this corpus report robustness or diagnostic checks; budget explicit space for lag-order and diagnostic sensitivity analysis regardless of family convention
Monthly or quarterly multivariate series, need for shock identification or policy counterfactuals (for example, the inflation response to a policy-rate shock)	Structural VAR; TVP-VAR if the sample spans a known regime change (inflation-targeting adoption, IMF programme entry or exit)	TVP-VAR remains a minority approach in this corpus despite Ghana's multiple documented regime changes, a clear opportunity rather than a settled practice

Data profile and policy question	Recommended primary framework	Key caveat from this review
Multi-country panel, testing whether a relationship (debt threshold, pass-through) is homogeneous across small open economies	Panel/GMM, with dynamic system-GMM preferred where endogeneity or unobserved country effects are a concern	Reserve pooled cross-country claims for contexts where institutional heterogeneity (Acemoglu et al., 2002) has been explicitly addressed rather than assumed away
Volatility, rather than the level, is the policy object (currency risk, inflation uncertainty, and its growth effects)	GARCH-family conditional-variance models	Effects are frequently conditional on financial-market depth (Aghion et al., 2009); report or control for this moderator explicitly
Structural, policy-counterfactual, or long-horizon question requiring micro-founded expectations (optimal monetary-policy design, welfare analysis)	DSGE with an explicit small-open-economy NKPC block	Lowest reporting transparency of any family in this corpus (6.2% state a sample period); calibration sources and parameter provenance should be stated explicitly, not assumed self-evident to the reader
Long-run co-movement between two or more nonstationary series without a strict single-equation ARDL structure (for example, stock returns and macro fundamentals, or food prices and headline inflation)	Cointegration/VECM	Ghana-anchored applications concentrate here (Ibrahim & Musah, 2014; Olusola et al., 2022), a comparatively mature and well-populated family for benchmarking new results against

The framework's overarching recommendation, following directly from the Results and Discussion, is that model choice in this literature should be driven first by the structural stability of the sample period and the directional-symmetry assumptions implicit in the policy question, grounded in the theoretical considerations set out in Section 1.2, and only secondarily by convention or by what a given sub-field has historically used. This caution is particularly relevant to the continued dominance of symmetric ARDL over NARDL specifications, and of fixed-parameter VAR over TVP-VAR, documented throughout this review.

5.9 Novelty and methodological rigor of the TDMT framework

The novelty of this review lies less in adding another descriptive tally of methods to an already crowded taxonomy, and more in making explicit, for the first time in the inflation-debt-exchange rate literature, the logical chain that connects macroeconomic theory to econometric practice. Prior bibliometric and narrative reviews in this space catalogue which model families are used and where, but none derive that usage from an explicit theory-to-diagnostics-to-method sequence, and none couple that sequence to a formal transparency audit. The TDMT framework does both: it treats model-family choice as the output of a theory (Layer 1) meeting a data structure (Layer 2), rather than as an independent methodological preference, and it treats reporting transparency (Layer 4) as a fourth analytic dimension on par with theory and method rather than an afterthought. This reframing is what allows the review's findings on underused frameworks, on uneven transparency by family, and on citation-visibility asymmetry to be read as three symptoms of a single structural gap rather than three unrelated observations.

The framework's rigor follows from its auditability. Because each layer is operationalized with a specific, replicable procedure, coded diagnostics, keyword and regular-expression transparency proxies, a pre-registered citation-funnel regression, the framework is not merely descriptive scaffolding but a falsifiable structure: a study that claims a theoretical motivation without an econometric family suited to its data structure, or a family choice unaccompanied by adequate reporting, is identifiable as a gap under this framework rather than as a matter of reviewer judgment. The explicit feedback loop from Layer 4 back to Layer 1 further distinguishes TDMT from a simple decision tree, since it accounts for why theoretically well-motivated but under-reported work (for example, TVP-VAR and DSGE studies with low sample-period disclosure) can remain underused despite strong theoretical grounding. In this sense, the framework does not just organize the review's findings after the fact; it specifies, in advance, the criteria by which future studies in this literature could be judged theoretically anchored, empirically appropriate, and transparently reported.

6. Conclusions

This systematic, bibliometric review mapped 120 studies, screened from an initial pool of 1,122 records identified across OpenAlex, CrossRef, and Semantic Scholar, addressing the econometric modeling of inflation, public debt, and exchange rate dynamics in Ghana and comparable small open economies between 1991 and 2026. Rather than pooling substantive quantitative findings, the review produced a theory-anchored structural map of the field. ARDL/NARDL bounds-testing and error-correction or cointegration frameworks together account for close to a third of the corpus and are the most Ghana- and Sub-Saharan Africa-anchored families, consistent with the pass-through and fiscal-dominance theory set out in Section 1.2. DSGE and NKPC approaches are comparatively citation-concentrated but remain largely confined to the methodologically foundational, typically advanced-economy literature, a pattern that follows naturally from their micro-founded, calibration-based structure. TVP-VAR and other regime-aware specifications are theoretically well motivated by Ghana's documented history of regime change but remain a minority practice, and reporting transparency varies sharply across families in ways that mark out ARDL/NARDL and ECM/VECM as the most workable starting points for future quantitative meta-analysis. Three priorities follow directly from this synthesis. First, full-text extraction of reported coefficients, including long-run elasticities, pass-through rates, error-correction speeds of adjustment, and debt-threshold estimates, from the ARDL/NARDL and ECM/VECM subsets would enable a genuine quantitative meta-analysis with pooled effect sizes, formal heterogeneity statistics, and a funnel-plot-based publication-bias assessment on actual effect sizes, the most direct, actionable extension of this review. Second, wider adoption of asymmetric and time-varying-parameter specifications, where the underlying economics warrants them, would close a specific gap between the field's theoretical motivation and its applied practice. Third, more consistent reporting of sample periods, named data sources, and diagnostic checks, practices already followed by a substantial minority of studies in every family, would materially improve the field's capacity for future synthesis. Ghana's, and comparable Sub-Saharan African economies', macroeconomic policy challenges, sustaining disinflation, managing debt stocks reprofiled through IMF-supported programmes, and stabilizing currencies under continued balance-of-payments pressure, are not going away, and the applied econometric literature addressing them deserves the same methodological infrastructure that comparable applied fields have already built for themselves. The bibliometric map, screening workbook, and figure set produced alongside this article are offered as a first, reusable layer of that infrastructure: a living starting point that future researchers can extend, correct, and build upon, rather than a final or closed synthesis of the field.

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