Monetary Policy in Oil-Exporting Economies: A Review of Insights from General Equilibrium Modeling

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Abstract

This paper presents a comprehensive review of the literature on monetary policy in oil and commodity exporting economies, employing general equilibrium models (GEMs) in both developing and developed countries. Covering the period 2000 to 2024, the study applies a systematic keyword search across Google Scholar, Scopus, and Web of Science to identify relevant literature. In addition to studies that fully implement GEMs, the review incorporates research utilizing partial GEMs and hybrid models that integrate GEMs with other econometric frameworks. A total of 70 studies are analyzed and systematically categorized according to country focus, model type, sectoral coverage, the nature of the shocks examined, and the underlying assumptions. In addition, the review places particular emphasis on the optimal policy recommendations proposed in these studies, while also examining the coordination between monetary and fiscal policies. To our knowledge, this is the first study to offer such a structured and comprehensive synthesis of the literature in this field.

1 Introduction

Monetary policy within general equilibrium models is crucial for analyzing economic shocks, particularly in oil economies. The relationship between oil prices and macroeconomic variables, as highlighted by Hamilton (1983), illustrates how external shocks influence inflation, output, and employment. Oil price fluctuations stem from supply shocks Caldara et al. (2019), aggregate demand shocks, and precautionary demand shocks Kilian et al. (2009), with the latter often driving long-term price movements Kilian (2010). Incorporating these shocks into equilibrium models enhances understanding of their macroeconomic impact.

The macroeconomic effects of oil shocks have evolved, as Bachmeier and Plante (2020) in Soytaş and Sarı (2020) notes. In the 1970s–1980s, oil price surges led to stagflation, but post-1995 inflation-targeting policies weakened the link between oil shocks and inflation or unemployment, despite ongoing price volatility. Central banks, through adjustments to interest rates and other policy tools, play an indirect but pivotal role through their transmission mechanisms in stabilizing economies facing commodity price volatility.

Mono-economy dependence and the resource curse exacerbate the challenges faced by oil-exporting economies, as lower economic growth and higher inflation often characterize resource-rich countries compared to their resource-poor counterparts Abounoori et al. (2014). Government spending, heavily reliant on oil revenues, dominates these economies, limiting private sector growth and diversification International Monetary Fund (2016). Furthermore, responses to oil price fluctuations vary according to industry structure and regulations, making fiscal and monetary policy coordination crucial for stability Shehabi (2020). However, developing nations often struggle to implement such coordination due to informal sectors, weak institutions, and external vulnerabilities Ahmed et al. (2012). These structural and institutional challenges necessitate tailored policy frameworks for resource-exporting economies, particularly given the significant variation in oil dependence among countries.

Oil-exporting economies require specialized monetary policies due to their vulnerability to commodity price fluctuations Babatunde Samson Omotosho (2022), which directly affect trade balances Charnavoki (2010). The volatility of the real exchange rate is prominent, which is appreciated in booms and depreciated in downturns, with the Backus-Smith puzzle Backus and Smith (1993) revealing a negative correlation between consumption and exchange rates. Dutch disease further complicates policy by causing currency appreciation and reduced non-commodity export competitiveness. High commodity prices fuel investment in commodity and non-tradable sectors, necessitating tailored monetary policies.

In the context of economic models, General Equilibrium Models (GEMs) are vital for analyzing macroeconomic dynamics in oil-exporting economies, where volatile oil prices significantly impact economic stability. Among them, Dynamic Stochastic General Equilibrium (DSGE) models, grounded in microeconomic principles, are widely used to study monetary and fiscal policies. Unlike traditional macroeconomic models, DSGE models address Lucas's critique Lucas Jr (1976) and build on Kydland and Prescott (1977), making them essential for understanding macroeconomic fluctuations in oil-dependent economies.

DSGE models have evolved into two main schools: Real Business Cycle (RBC) and New Keynesian (NK). RBC models, pioneered by Kydland and Prescott (1982) and Prescott (1986), focus on technology-driven fluctuations, but ignore monetary factors, limiting their relevance to central banks. Attempts to integrate monetary aspects, such as the Classical Monetary Model (CMM) by Cogley and Nason (1995), failed to capture short-term effects of monetary policy. NK models, as highlighted by Walsh (2017), better incorporate monetary policy, inflation, and business cycles, making them particularly relevant for oil-dependent economies.

Econometric models complement GEMs in macroeconomic analysis. Although DSGE models offer structural insight, they face criticism for oversimplifications and assumptions. Models like Vector Autoregression (VAR), Structural Vector Autoregression (SVAR), and Bayesian Vector Autoregression (BVAR) excel in capturing historical relationships and short-term forecasts Malakhovskaya (2019) and Soytaş and Sarı (2020), although DSGE models outperform BVARs in medium to long-term predictions of interest rates and oil shocks. Integrating GEMs with econometric models improves precision and policy analysis.

DSGE models are crucial for central banks (CBs) in both developed and developing economies, helping to identify shocks and forecast policy Dotsey et al. (2013). Institutions like the Swedish, European, Norwegian, and US Federal Reserve employ them to assess policy shifts. However, adapting these models to oil-exporting economies requires adjustments for structural differences. While industrialized nations emphasize capital's role, oil-exporting developing countries face challenges like Dutch disease, which weakens manufacturing through currency appreciation and resource shifts Abounoori et al. (2014).

While extensive work exists on using General Equilibrium Models (GEMs) to study monetary policy in oil-exporting economies, there is no comprehensive review systematically analyzing optimal monetary policies and fiscal-monetary coordination. This paper addresses this gap by critically synthesizing the literature on GEMs in oil-exporting economies, highlighting key methodologies and findings. For students and model developers, it provides foundational insights into existing approaches, while offering researchers and policymakers an updated perspective on advancements in monetary-fiscal policy coordination. By bridging this gap, the review guides future research and enhances the application of GEMs to the unique challenges of resource-dependent economies.

2 Methodology

This paper incorporates a selection of studies accessed through three academic databases. Google Scholar, Scopus, and Web of Science. A systematic search strategy was applied, utilizing specific keywords in conjunction with Boolean operators (e.g., AND, OR, NOT) to refine the search results. The time frame considered spans from 2000 to 2024, chosen due to the growing adoption of DSGE models by central banks and researchers. The following diagram illustrates the systematic process used for keyword-based searches and the sequential steps to select the studies included in this review.

The initial step in the selection process involves identifying relevant studies within the databases using predefined keywords. Subsequently, the corresponding PDFs are downloaded into Zotero, where further filtering is conducted. Each paper is assessed to determine whether it examines monetary policy in oil- or commodity-exporting economies using General Equilibrium models. Studies that do not meet these criteria [1] ; or originate from unverified or unreliable sources (as outlined below) are excluded from the analysis.

The keywords used in Google Scholar are the following:

Google Scholar supports basic Boolean operators such as `AND`, `OR`, and `NOT`, but its interpretation can be less strict and may not fully support complex nesting with parentheses. Therefore, the first table employs

1. papers employing econometric models or other methodologies are omitted from this review unless they are utilized in conjunction with GEMs.

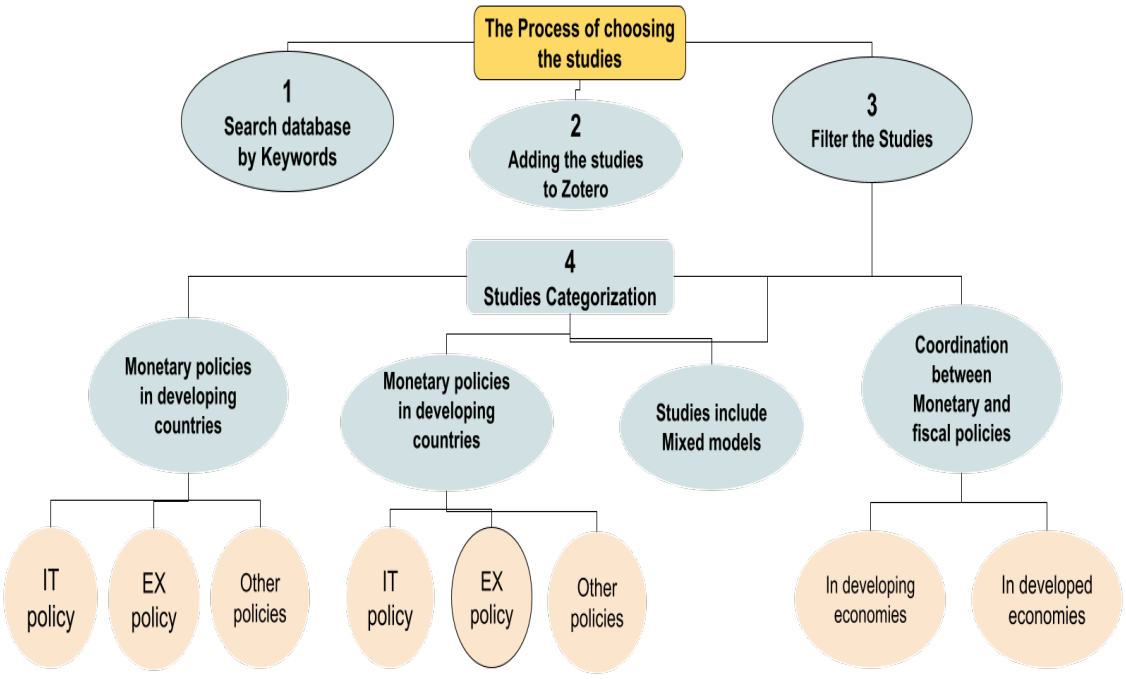


Figure 1: Steps for Selecting and Categorizing Studies for Literature Review

straightforward `AND` combinations without nested groupings. For more details, see [2]. In contrast, Scopus offers advanced Boolean capabilities, allowing for precise searches using nested parentheses to group synonyms and related terms. This enables the construction of more intricate queries, as seen in the second table, which uses parentheses to combine synonyms and broaden the search scope effectively. For further information, refer to [3]. Finally, Web of Science (WOS) provides a highly structured and precise search environment, supporting advanced Boolean operations along with specific field codes and truncation for targeted searches. This flexibility allows for the inclusion of wildcard operators (e.g., $*$) to account for variations in terms, as reflected in the final table, which employs Boolean operators and field-specific terms for a more tailored search strategy. For detailed guidance, refer to [4].

The documents used are selected from the following sources:

- Peer-reviewed journals.[5]
- PhD dissertations from reputed universities.[6]
- Working papers from reputed institutions and central banks.
- Chapters of books.

The following studies present studies from the same country in chronological order, detailing each study's specific economy, the model employed, the sectors included, the shocks analyzed, and the optimal monetary policy alongside alternative policy considerations. Although these details may appear extensive, they are essential to provide a comprehensive overview, allowing readers to assess the relevance of each study to their interests and to discern the structural differences among the models used.

2. Google Scholar Help
3. Scopus Quick Reference Guide
4. Web of Science Quick Reference Guide
5. Reputed Journals refers to those that are included in SCOPUS and WOS.
6. Reputed universities refers to high world ranking universities, assuming the range between 1 - 350

Key Word
General Equilibrium Models:
"Monetary Policy" AND "General Equilibrium models" AND "Oil exporting economies"
"Monetary Policy" AND "General Equilibrium models" AND "Commodity exporting economies"
"Monetary Policy" AND "General Equilibrium models" AND "Rich economies"
"Monetary Policy" AND "General Equilibrium models" AND "Oil exporting economies" AND "Oil price shocks"
"Monetary Policy" AND "General Equilibrium models" AND "Commodity exporting economies" AND "Oil price shocks"
"Monetary Policy" AND "General Equilibrium models" AND "Rich economies" AND "Oil price shocks"
DSGE Models:
"Monetary Policy" AND "DSGE model" AND "Oil exporting economies"
"Monetary Policy" AND "DSGE model" AND "Commodity exporting economies"
"Monetary Policy" AND "DSGE model" AND "Rich economies"
"Monetary Policy" AND "DSGE model" AND "Oil exporting economies" AND "Oil price shocks"
"Monetary Policy" AND "DSGE model" AND "Commodity exporting economies" AND "Oil price shocks"
"Monetary Policy" AND "DSGE model" AND "Rich economies" AND "Oil price shocks"
New Keynesian Models:
"Monetary Policy" AND "New Keynesian model" AND "Oil exporting economies"
"Monetary Policy" AND "New Keynesian model" AND "Commodity exporting economies"
"Monetary Policy" AND "New Keynesian model" AND "Rich economies"
"Monetary Policy" AND "New Keynesian model" AND "Oil exporting economies" AND "Oil price shocks"
"Monetary Policy" AND "New Keynesian model" AND "Commodity exporting economies" AND "Oil price shocks"
"Monetary Policy" AND "New Keynesian model" AND "Rich economies" AND "Oil price shocks"
Computable General Equilibrium Models:
"Monetary Policy" AND "computable general equilibrium model" AND "Oil exporting economies"
"Monetary Policy" AND "computable general equilibrium model" AND "Commodity exporting economies"
"Monetary Policy" AND "computable general equilibrium model" AND "Rich economies"
"Monetary Policy" AND "computable general equilibrium model" AND "Oil exporting economies" AND "Oil price shocks"
"Monetary Policy" AND "computable general equilibrium model" AND "Commodity exporting economies" AND "Oil price shocks"
"Monetary Policy" AND "computable general equilibrium model" AND "Rich economies" AND "Oil price shocks"

Table 1: Key Word Search in Google scholar

Key Word
"Monetary Policy" AND ("General Equilibrium" OR "DSGE" OR "New Keynesian") AND ("Oil-exporting economies" OR "Commodity-exporting economies" OR "Developing economies")
"Monetary Policy" AND ("General Equilibrium" OR "DSGE" OR "New Keynesian") AND ("Rich economies" OR "Advanced economies")
"Monetary Policy" AND ("DSGE" OR "New Keynesian") AND ("Oil-exporting economies" OR "Commodity-exporting economies") AND "Oil price shocks"
"Monetary Policy" AND "Computable General Equilibrium" AND ("Oil-exporting economies" OR "Commodity-exporting economies" OR "Developing economies")
"Monetary Policy" AND ("General Equilibrium" OR "DSGE" OR "New Keynesian") AND ("Rich economies" OR "Oil-exporting economies") AND "Oil price shocks"
"Monetary Policy" AND "DSGE" AND ("Oil-exporting economies" OR "Commodity-exporting economies")
"Monetary Policy" AND "Computable General Equilibrium" AND ("Rich economies" OR "Oil-exporting economies") AND "Oil price shocks"
"Monetary Policy" AND ("New Keynesian" OR "DSGE") AND ("Rich economies" OR "Developing economies")

Table 2: Key Word Search in Scopus

Key Word
General Equilibrium Models:
Monetary Policy AND General Equilibrium models AND Oil export* econom*
Monetary Policy AND General Equilibrium models AND Commodity export* econom*
Monetary Policy AND General Equilibrium models AND Rich* econom*
Monetary Policy AND General Equilibrium models AND Oil export* econom* AND Oil price shocks
Monetary Policy AND General Equilibrium models AND Commodity export* econom* AND Oil price shocks
Monetary Policy AND General Equilibrium models AND Rich* econom* AND Oil price shocks
DSGE Models:
Monetary Policy AND DSGE model AND Oil export* econom*
Monetary Policy AND DSGE model AND Commodity export* econom*
Monetary Policy AND DSGE model AND Rich* econom*
Monetary Policy AND DSGE model AND Oil export* econom* AND Oil price shocks
Monetary Policy AND DSGE model AND Commodity export* econom* AND Oil price shocks
Monetary Policy AND DSGE model AND Rich* econom* AND Oil price shocks
New Keynesian Models:
Monetary Policy AND New Keynesian model AND Oil export* econom*
Monetary Policy AND New Keynesian model AND Commodity export* econom*
Monetary Policy AND New Keynesian model AND Rich* econom*
Monetary Policy AND New Keynesian model AND Oil export* econom* AND Oil price shocks
Monetary Policy AND New Keynesian model AND Commodity export* econom* AND Oil price shocks
Monetary Policy AND New Keynesian model AND Rich* econom* AND Oil price shocks
Computable General Equilibrium Models:
Monetary Policy AND computable general equilibrium model AND Oil export* econom*
Monetary Policy AND computable general equilibrium model AND Commodity export* econom*
Monetary Policy AND computable general equilibrium model AND Rich* econom*
Monetary Policy AND computable general equilibrium model AND Oil export* econom* AND Oil price shocks
Monetary Policy AND computable general equilibrium model AND Commodity export* econom* AND Oil price shocks
Monetary Policy AND computable general equilibrium model AND Rich* econom* AND Oil price shocks

Table 3: Key Word Search in Web of science

3 Statistical overview

This paper includes 70 studies, analyzing 57 for developing economies and 13 for developed economies. Figure 2 shows that most of the studies in this paper focus on developing economies, particularly African countries, which consist of:

- **The People's Democratic Republic of Algeria**
- **Nigeria**
- **The Republic of Ghana**
- **Other African countries**

In addition to:

- **The Islamic Republic of Iran**
- **The Russian Federation**
- **Azerbaijan**
- **Kazakhstan**
- **Other Asian countries**
- **Latin America**

Figure 2: Distribution Of Collected Studies in developing and developed economies

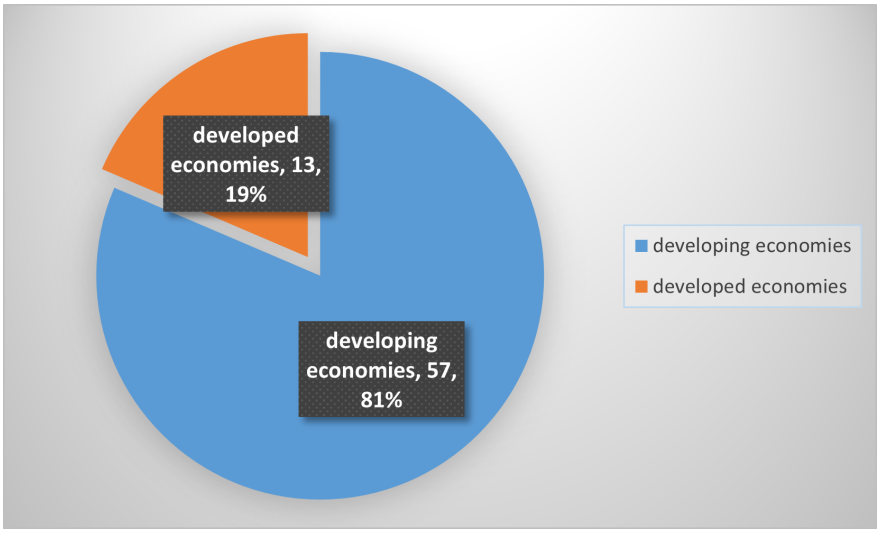
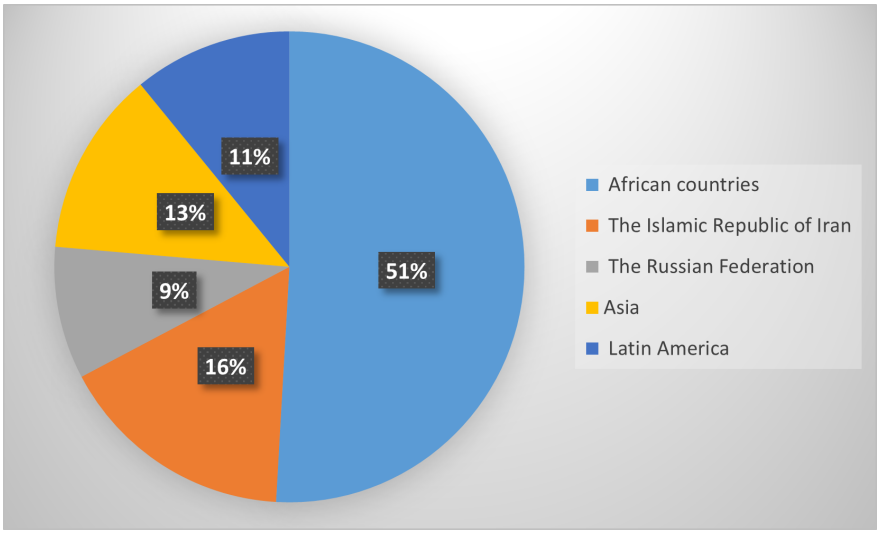


Figure 3 presents the proportion of studies on developing economies, measured as a percentage of the total 70 analyzed studies.

Regarding developed economies, they are represented in 13 studies, including cases from Canada, the United States, Australia, Norway, OECD countries, and others.

Figure 3: Distribution Of Collected Studies in developing and developed economies



4 Monetary Policy in developing and emerging economies

This section focuses on studies from developing economies that constitute the majority of the literature in comparison to those from developed economies. Explores the optimal monetary policies proposed by various authors, analyzing different policy approaches such as inflation targeting, exchange rate targeting, and other recommended frameworks. In oil and commodity exporting economies, where exports represent 90-95% of total revenues in Saudi Arabia and Kuwait and 80–90% in Iran, their contributions are relatively lower in UAE (70%), Russia (64%), Venezuela (75%), Norway (36%) and Mexico (10%) according to Villarreal (2007). These variations highlight the diverse economic structures of oil-exporting nations, underscoring the necessity of general equilibrium models as essential tools for designing effective and context-specific policy responses.

Many studies have built upon the seminal work of Gali and Monacelli (2005), which is widely regarded as the cornerstone of DSGE models. These studies incorporate necessary modifications to adapt the models for oil- and commodity-exporting economies. The foundational framework of these studies is reflected in the study bar, as the original research explicitly acknowledges its influence.

. Since this paper examines monetary policies in exporting economies, optimal monetary policy recommendations and other relevant policy considerations will be discussed in the main text rather than included in the tables. Instead, the tables will provide a structured summary of the studies, outlining the countries analyzed, the models and data used, the sectors incorporated within the models, and the shocks to which the impulse response functions respond. This approach minimizes redundancy while enhancing clarity, allowing readers to quickly grasp key details in a systematic and accessible manner. While this section presents the study's findings, the discussion section will focus on drawing conclusions and interpreting the implications of the results. Additionally, the studies included in this paper are structured within each paragraph in chronological order, from older to more recent works, and are categorized geographically. This organization ensures a clear and systematic progression, facilitating a comprehensive understanding of the evolution of research on monetary policies in exporting economies across different regions.

4.1 African countries

Starting with African countries, which they consists almost half of studies in developing and emerging economies, mainly, Federal Republic of **Nigeria**, The People's Democratic Republic of **Algeria**, the Republic

of **Ghana**, The Republic of **Mozambique**, The Republic of **South Sudan**, The Federal Democratic Republic of **Ethiopia**, The Republic of **Guinea-Bissau**, The Republic of **Rwanda**, , State of **Libya**, Republic of **South Africa**.

4.1.1 The People's Democratic Republic of Algeria

Table 4: Summary of Studies on Monetary Policy for the Algerian Economy

Study	Country	Model and Data	Sectors Included	Shocks
Dib (2008)	Algeria	Calibrated NK-DSGE with (1992 to 2005) data	Households, a final good producer, an oil-producing firm, non-oil producers, importers, and a monetary authority	Oil prices, USD , (EUR/USD) devaluation, and monetary policy.
Benkhodja (2011)	Algeria and Canada	Calibrated multi-sector DSGE model	Household, oil sector, Final good producer (tradable manufacturing, non-tradable services), import sector, Central bank, and Government	windfall shocks and boom shocks.
Benkhodja (2014) based on Dieppe et al. (2018), Acosta et al. (2009), and Lama and Guzman (2010)	Algeria (Not explicitly)	Calibrated multisector DSGE model for Algeria	Household, oil sector, the non-tradable good sector and the import sector, Central bank , and government	windfall and boom shocks.
J. P. Allegret and Benkhodja (2015)	Algeria	Estimated DSGE model using quarterly data, 1990-2010)	Households, Oil Firms, Non-Oil Producers, Import Sector, Final Goods Producers, Banks, Central Bank, and Government.	Oil Price, Exchange Rate, Interest Rate
J.-P. Allegret and Benkhodja (2015)	16 countries included Algeria	DSGE with annual data (1980-2010), For Russia (1992-2010)	Households, Oil Firms, Manufacturing Producers, Nontradable Producers, Importers, Final Goods Producers, Central Bank, Government.	Oil Price, Exchange Rate
Allegret et al. (2018)	Algeria	Calibrated DSGE with (1980-Q1 to 2014-Q4) data	Households, Firms (Intermediate good firms, oil firm, final good firms), central bank, government, The international oil market.	International oil price, productivity, money demand, labor supply and monetary policy.

The studies provide valuable insights into the optimal monetary policies for oil-exporting economies, particularly Algeria, Dib (2008) highlights the effectiveness of a Taylor-type monetary policy rule, which adjusts short-term nominal interest rates in response to inflation and exchange rate variations. This approach is found to be more responsive compared to alternative policies like a money supply rule, which struggles to manage fluctuations in inflation and exchange rates effectively. Similarly, Benkhodja (2011) emphasizes the

importance of a flexible exchange rate regime combined with wage-price rigidities and inflation targeting. This strategy is deemed optimal for managing windfall shocks (increased oil prices) and boom shocks (increased oil resources), as it mitigates the Dutch disease and sustains balanced growth. In contrast, a fixed exchange rate is discouraged, as it exacerbates the Dutch disease when wages are flexible and prices are sticky.

Building on these findings, Benkhodja (2014) further supports the use of a flexible exchange rate regime paired with inflation targeting. This combination is shown to stabilize the economy in response to oil shocks, improve welfare, and prevent adverse effects such as de-industrialization. However, the study also notes that a fixed exchange rate regime is less effective in mitigating the negative impacts of oil shocks, particularly the Dutch disease. Meanwhile, J. P. Allegret and Benkhodja (2015) advocates for core inflation targeting, which requires central bank independence and strengthens interest rate transmission. Alternative strategies like headline inflation targeting and exchange rate targeting are also considered but are less effective in managing economic conditions.

The study by J.-P. Allegret and Benkhodja (2015) which includes 15 economies beside Alegeria, provides a nuanced perspective, recommending inflation targeting (IT) for larger, high oil-dependent economies like Algeria and Saudi Arabia, while suggesting exchange rate targeting (ER) for smaller, open economies like Gabon, Kuwait, and Oman. This differentiation is crucial, as high oil-dependent countries are more prone to the Dutch disease, and fixed exchange rates can help stabilize spending effects. Finally, Allegret et al. (2018) recommends a fixed exchange rate (ER) rule as the optimal policy to prevent the Dutch disease effect by stabilizing the real exchange rate and supporting the export sector. While inflation targeting (IT) and domestic oil price inflation targeting (Frankel rule) are also examined, the Frankel rule underperforms, causing higher macroeconomic volatility and failing to mitigate the Dutch disease effectively.

4.1.2 The Federal Republic of Nigeria

Table 5: Summary of Studies on Monetary Policy for the Nigerian Economy

Study	Country	Model and Data	Sectors Included	Shocks
Third essay in Iklaga (2016) dissertation	Nigeria	Estimated DSGE with (2002:Q3-2015:Q4) data	Households (Ricardian and Non-Ricardian), Firms, Government, Central Bank	Technology, Government Spending, Oil Price, Monetary Policy, Markup
Fourth essay in Iklaga (2016) dissertation	Nigeria	Calibrated DSGE model employs macroeconomic data.	Households (Ricardian and non-Ricardian consumers), firms, government, ,central bank, international financial frictions and an oil sector	Technology, markup, consumption, investment, monetary policy, and government spending shock.
Third essay in Oladunni (2020a) dissertation	Nigeria	Calibrated NK-DSGE	Households (non-tradable and foreign imported goods) , non-tradable domestic firms, Export-Only Oil, importers, foreign economy firms, Monetary Policy	10% positive standard deviation shock to the international price of oil.

Continued on next page

Study	Country	Model and Data	Sectors Included	Shocks
Fourth essay Oladunni (2020a)	Nigeria	Calibrated NK-DSGE	households, non-oil firms, and the Domestic oil sector, Government consumption, Monetary policy, foreign economy	Negative Oil Price Shock
Oladunni (2020b), building on Gali and Monacelli (2005)	Nigeria	Calibrated NK-DSGE	Households, Firms (Domestic, oil for export only, Non-oil for domestic consumption), Importers, Foreign Production (tradable and non-tradable), Monetary Policy,	positive oil price shock

For Nigeria, Iklaga (2016), the third essay proposes an Optimized Taylor Rule as the optimal policy, targeting inflation and output gaps while incorporating fiscal-monetary coordination to mitigate oil price volatility and structural constraints. This approach is supplemented by Exchange Rate Interventions to address external shocks. The fourth essay in the same dissertation suggests the real wage target rule, which stabilizes inflation and real exchange rate fluctuations, but results in high interest rate volatility, necessitating further monetary-fiscal coordination. Alternative policies, such as the implementable Taylor rule, the price-level targeting rule, and the foreign exchange intervention, were evaluated, but found to be less effective.

The third essay in Oladunni (2020a) identifies the Domestic Inflation Targeting Rule as the optimal policy for achieving welfare-enhancing outcomes, ensuring inflation stability and long-term output stabilization. In contrast, alternative policies such as the Exchange Rate Targeting Rule and Consumer Inflation Targeting Rule are found to exacerbate Dutch Disease and contribute to a sharper decline in non-tradable output. Building on this analysis, the fourth essay in Oladunni (2020a) examines Nigeria as a net oil-exporting economy and explores the impact of a negative oil price shock. It recommends Core Inflation Targeting with zero pass-through as the optimal policy, as it effectively stabilizes the economy in response to oil price fluctuations. Additionally, the study evaluates Oil Inflation Targeting, considering both partial and full pass-through approaches, which, while offering an alternative framework, introduce greater monetary volatility

Based on these findings, Oladunni (2020b) examines the impact of a positive oil price shock and recommends an easy monetar policy, lowering interest rates or increasing the money supply, as the optimal strategy to counteract Dutch disease. This policy stabilizes domestic output but contrasts with CPI Targeting (Inflation Targeting), which exacerbates Dutch disease by failing to address the decline in non-tradable and total output post-oil boom. Additionally, while Exchange Rate Policy is present across all frameworks, it lacks a specified alternative strategy, limiting its effectiveness.

Table 6: Summary of Studies on Monetary Policy for the Nigerian Economy

Study	Country	Model and Data	Sectors Included	Shocks
Chuku (2020), building on Berg et al. (2015), Benkhodja (2014), Dagher et al. (2012)	Nigeria	calibrated three-sector (DSGE) model (2000–2013)	Households, firms in tradable and non-tradable sectors, a natural resource sector, the fiscal authority, and the central bank	Resource windfall shocks, resource price fluctuations, and domestic inflation.

Continued on next page

Study	Country	Model and Data	Sectors Included	Shocks
Third essay S. B. Omotosho (2021)	Federal Republic of Nigeria	Two-Agent Estimated New Keynesian (TANK) DSGE model with data from (2000:Q2-2018:Q2)	Households (Ricardian and non-Ricardian), non-oil firms, import retailers, oil firms, fiscal authority, central bank.	oil price shocks and fuel subsidies shocks
(Essay 2) in Aviomoh et al. (2022) dissertation, influenced by Bergholt et al. (2019)	Nigeria, Mexico	Calibrated Two-Country DSGE model	Non-oil Production Sector , Intermediate Production Firms, Oil Production Sector , Oil Price Determination , Monetary and Fiscal Policy	Structural , Oil Demand , Exchange Rate ,Terms of Trade , Fiscal Policy and Monetary Policy Shocks
Omotosho and Tumala (2024) adapted from Gali and Monacelli (2005)	Federal Republic of Nigeria	Estimated NK-DSGE with a fuel subsidy regime, (2000:Q2-2019:Q4)	Households (Ricardian and Non-Ricardian), Firms (Final and Intermediate goods, oil firm), Imported goods retailers, fiscal policy, Monetary policy, Oil Sector	Fuel Subsidies, Oil Price, Fiscal Policy, Risk Premium.
Omotosho and Yang (2024)	Federal Republic of Nigeria	Estimated Regime-switching DSGE model quarterly data (2000Q2-2018Q2)	The model incorporates Ricardian and non-Ricardian households, an oil-producing sector influenced by fuel subsidies, and a monetary policy framework guided by a Taylor rule, with parameters that shift between "hawkish" (aggressive inflation targeting) and "dovish" (less responsive) regimes.	Oil price, oil sector productivity, domestic productivity, risk premium, monetary policy, fiscal policy (government spending, tax), and external factors (foreign policy, inflation, risk premium).

For Nigeria, S. B. Omotosho (2021) identifies a flexible exchange rate regime with inflation targeting as the optimal policy, minimizing welfare loss (0.16% of steady-state consumption) and enhancing domestic stability. This approach allows full absorption of resource windfalls, boosting short-term employment and private sector spending, despite higher output volatility. Less effective alternatives include the crawling peg regime, which reduces Dutch disease and inflation but crowds out private investments, and the money growth target, which stabilizes employment but increases welfare losses (0.26% of steady-state consumption) due to tighter monetary conditions.

Third essay in S. B. Omotosho (2021) builds on this, proposing a core inflation-based Taylor rule as optimal for stabilizing inflation and exchange rates, despite short-term output instability. Other policies like the Domestic Inflation-Based Rule, Export Price-Based Rule, Fuel Subsidy Removal, and Counter-Cyclical Fiscal Policy are less effective. Similarly, second essay Aviomoh et al. (2022) highlight inflation stabilization

during oil booms and output stabilization during price declines as optimal. Inflation Targeting (IT) and Output Targeting are less effective, with IT failing to address exchange rate-driven inflation and output targeting increasing inflation volatility. Policies tackling Dutch disease risk inflation and output instability, while subsidies distort prices and weaken monetary policy.

Omotosho and Tumala (2024) propose the Core Inflation-Based Taylor Rule (CITR) with fuel subsidies as the optimal policy for stabilizing inflation, output, and exchange rate volatility after oil price shocks. Alternative rules like the Inflation-Based Taylor Rule (HITR) and Domestic Inflation-Based Taylor Rule (DITR) are less effective due to energy price sensitivity and exchange rate neglect. The Product Price Targeting Rule (PPTR) stabilizes output but worsens inflation and exchange rate volatility. Omotosho and Yang (2024) advocate for a Hawkish Monetary Policy under the Taylor Rule, combined with a Managed Float Exchange Rate and Counter-Cyclical Fiscal Policy, to stabilize inflation, currency and debt. They also examine Regime-Switching Monetary Policy and Fiscal Strategies, emphasizing coordinated policies to manage inflation and exchange rate volatility.

Table 7: Summary of Studies on Monetary Policy for the Nigerian Economy

Study	Country	Model and Data	Sectors Included	Shocks
Queen Esther and Adams (2024)	Federal Republic of Nigeria	calibrated DSGE model using data (1981–2017)	households (rent-seeking and non-rent-seeking), firms (rent-seeking and non-rent-seeking), the government, and the Central Bank	Government spending, taxation, interest rates, technology, and rent-seeking behavior.
Rasaki and Chukwu (2024) based on Medina and Soto (2016)	Republic of (Kenya, Malawi, South Africa, Uganda, Nigeria).	Estimated DSGE model (1995-2021),	Households, Firms, Commodity Sector, Monetary Authorities	Commodity Price, Foreign Interest, Productivity, Demand Shocks.

In Queen Esther and Adams (2024), the optimal policy is an Active Monetary Policy that stabilizes prices and output, while Fiscal Policy remains passive and pro-cyclical. The study highlights the importance of Central Bank Independence in preventing rent-seeking interference, emphasizing that the Ramsey Optimal Policy, which prioritizes price stability over responding to rent-seeking, yields slightly better welfare under a benevolent government. The best policy mix combines an Active Monetary Policy with a Passive Fiscal Policy to ensure stability, with the Central Bank focusing on price control when rent-seeking is high and shifting to a Dual Mandate—initially lowering interest rates before tightening—when rent-seeking declines. Building on these findings, Rasaki and Chukwu (2024) propose Inflation Targeting and Nominal GDP Targeting as the most effective rules for stabilizing output and prices against negative commodity price shocks, outperforming Exchange Rate Targeting. These policies effectively mitigate economic shocks from commodity price fluctuations, foreign interest rate changes, productivity shifts, and demand shocks, ensuring greater overall stability.

4.1.3 The Republic of Ghana

Table 8: Summary of Studies on Monetary Policy for the Ghanaian Economy

Study	Country	Model and Data	Sectors Included	Shocks
Essay 6 in Ameyaw (2023) diisertation	Ghana	Estimated NK-DSGE closed-economy model by using (2002:Q1-2016:Q4)	Households, Firms (intermediate and final goods), Monetary policy	Productivity, demand, and a monetary shocks.
Akosah et al. (2024)	Ghana	Estimated NK-DSGE model (2000:Q2–2017:Q4)	Households, Firms (final and intermediate good producing), Government, foreign Economy (Euro area)	Supply, Markup, demand shocks and policy shocks.

The study by Ameyaw (2023) finds that a stronger response to inflation by raising interest rates about three times the inflation increase—improves price stability. It also recommends quantitative tightening during high inflation periods. Effective government policies that anchor inflation expectations and increase price stickiness (reflected in the Calvo parameter) further enhance inflation targeting. Similarly, Akosah et al. (2024) examines optimal monetary policy using a forward-looking Taylor rule, responding to inflation deviations one quarter ahead and the contemporaneous output gap. The study explores alternative policies, including backward-looking rules and rules incorporating exchange rates or foreign interest rates, showing that contractionary monetary shocks are key to disinflation and output contraction. The research considers various shocks, including supply, markup, demand, and policy shocks.

4.1.4 Other African countries

Table 9: Summary of Studies on Monetary Policy for the Other African Economies

Study	Country	Model and Data	Sectors Included	Shocks
Chapter 5 by Peiris and Saxegaard (2008) in Peiris and Clément (2008) book	The Republic of Mozambique	Estimated DSGE model using Quarterly Data (1996Q1–2005Q4)	Households, Firms, Public Sector.	Aid Inflows, Terms of Trade, Productivity Fluctuations
Ssemwanga (2014) is taken totally from Bouakez and Vencatachellum (2007a)	The Republic of South Sudan	calibrated DSGE	Output, consumption, investment, and government.	oil price shocks
In essay 1 Melesse (2016) dissertation	The Federal Democratic Republic of Ethiopia	calibrated NK-DSGE model using (2000:Q1-2013:Q4)	Households, firms, the government, monetary policy and foreign trade.	Technological, monetary policy, fiscal policy, exchange rate, and terms of trade shocks.

Continued on next page

Study	Country	Model and Data	Sectors Included	Shocks
Iyer (2017)	The Republics of (Guinea-Bissau, Rwanda, Ethiopia.)	calibrated DSGE model	Households , Firms (Commodity and Non-Commodity Sector), Central Bank .	Negative shock to the international price of agricultural commodities
Essay 5 in Ben-Naser et al. (2018)	Libya	Estimated NK-DSGE model using time series data (1962-2017)	oil sector, non-oil exports, imports, and government expenditure	Supply and demand shocks
Mohimont (2022)	South Africa	Estimated New Keynesian DSGE model using quarterly data (1994Q1–2017Q4).	Households (financially included and excluded), firms (commodity and secondary good producers), labor market.	Domestic shocks: labor productivity, cost-push, wage bargaining, vacancy cost. External shocks: foreign interest rate, commodity price.

In context of exporting African economies, Peiris and Saxegaard (2008) examines economic shocks and study recommends spending and absorbing aid shocks under normal conditions while adopting a light inflation targeting (IT) framework to reduce macroeconomic volatility. This approach is particularly effective in managing external shocks and maintaining stability. Additionally, the study highlights the importance of exchange rate targeting and effective foreign aid management as complementary policies to enhance economic resilience. Similarly, Mohimont (2022) explores domestic shocks, including labor-augmenting productivity, cost-push effects, wage bargaining, and vacancy costs, alongside external shocks like foreign interest rate fluctuations and commodity price changes. The findings emphasize that financially excluded households benefit significantly from unemployment and wage stabilization policies, while included households prefer strong CPI inflation targeting. This underscores the need for differentiated policy approaches to address the diverse impacts of shocks across household groups.

Furthermore, Ssemwanga (2014) focuses on oil price shocks and recommends a managed float exchange rate regime as the optimal policy to mitigate inflationary pressures and exchange rate appreciation during oil price booms. This policy is particularly relevant for resource-dependent economies vulnerable to commodity price volatility. In addition to monetary measures, the study advocates for fiscal policy interventions, such as strengthening development plans, implementing austerity measures, and establishing a National Revenue Authority to diversify revenue sources. Collectively, these studies highlight the importance of combining monetary and fiscal policies to address specific shocks and stabilize economies. They also emphasize the trade-offs between price, wage, and unemployment stabilization, particularly in emerging markets, where financially excluded households bear disproportionate welfare costs during business cycles. These insights provide a comprehensive framework for designing policies tailored to the unique challenges of exporting economies in Africa.

The analysis of monetary policies for agricultural exporting economies, particularly in African countries, provides critical insights into the optimal strategies for managing economic shocks. Iyer (2017) examines the impact of a negative shock to the international price of agricultural commodities and recommends fixed exchange rates as the optimal policy for agricultural commodity-exporting economies with underdeveloped labor and product markets. This approach helps mitigate costly relative price and wage adjustments, which are particularly challenging in such contexts. However, the study cautions against adopting flexible exchange rates and inflation targeting in underdeveloped markets, as these can increase macroeconomic volatility. Instead, it suggests that transitioning to flexible exchange rates and inflation targeting becomes appropriate as economies mature and markets become more flexible. Additionally, the study highlights the importance of

considering labor and product market rigidity when designing exchange rate regimes, emphasizing the need for policies tailored to the specific characteristics of the economy.

Similarly, Essay 5 in Ben-Naser et al. (2018) focuses on supply and demand shocks and recommends responding more aggressively to inflation movements to stabilize the economy and reduce exchange rate misalignments. The study emphasizes the importance of forecasting future inflation to guide monetary policy and aligning fiscal and monetary policies to ensure economic stability. Other policies considered include trade liberalization to reduce inflation and foreign exchange controls to manage black market premiums, particularly during periods of oil price volatility. The study also highlights the need to maintain the real exchange rate close to its equilibrium path to avoid overvaluation or undervaluation, which can negatively impact economic performance. These findings underscore the importance of a coordinated policy approach to address both internal and external shocks in exporting economies.

In Essay 1 on Ethiopia, Melesse (2016) analyzes multiple economic shocks, including technological shocks, monetary policy shocks, fiscal policy shocks, exchange rate shocks, and terms of trade shocks. The study recommends the interest rate feedback rule as the optimal policy, as it is more effective at amplifying and transmitting economic shocks compared to money growth rules. It also highlights that monetary policy plays a stronger role in stabilizing open economies, whereas fiscal policy interventions are more effective in closed economies. However, the study notes that monetary policy effectiveness is constrained by incomplete information, underscoring the need for policymakers to account for uncertainty when making decisions. Collectively, these studies emphasize the importance of tailoring monetary and fiscal policies to the specific characteristics of exporting economies, such as market development levels, the nature of shocks, and the structure of the economy. They also highlight the trade-offs and complementary roles of different policy tools in achieving macroeconomic stability and reducing the adverse impacts of economic shocks.

Table 10: Summary of Studies on Monetary Policy for the Other African Economies

Study	**Country**	**Model and Data**	**Sectors Included**	**Shocks**
Iyer (2016), using a DSGE model based on Benigno (2009)	emerging market economies (EMEs)	Calibrated DSGE model	Households (Financially-Excluded and included Agents), Firms, Central Bank.	Adverse supply shocks (cost-push) from domestic food and fuel price volatility, plus productivity shocks.
(Essay 3) in Aviomoh et al. (2022) dissertation,	low- and middle-income commodity-driven economies	Two-country commodity DSGE model with a financial sector	households, firms (especially oil-producing firms), financial institutions (banks imposing borrowing constraints), the commodity market (oil sector), and a central bank	Commodity price shocks ,financial sector shocks , exchange rate shocks.

The studies analyzed offer valuable insights into the formulation of optimal monetary policies for exporting economies, particularly emerging markets, through the lens of dynamic stochastic general equilibrium (DSGE) models. Iyer (2016), highlights the significance of adverse supply shocks—including domestic food price volatility, fuel input price fluctuations, and productivity shocks—in shaping policy recommendations. A key finding is the need to smooth consumption for financially excluded agents by stabilizing their income, which requires assigning a greater weight to the output gap in the welfare loss function as financial exclusion and economic openness increase. While the study compares CPI inflation targeting (CIT) and strict domestic inflation targeting (DIT), it ultimately finds that a fixed nominal exchange rate (PEG) is the least suboptimal policy in economies with high financial exclusion. This is because exchange rate stability

helps mitigate fluctuations in the relative price of domestic goods, thereby supporting the consumption of financially-excluded agents during cost-push shocks. These results challenge Milton Friedman's argument for flexible exchange rates, instead advocating for a pegged exchange rate in such contexts.

Similarly, Aviomoh et al. (2022) investigates the impact of commodity price shocks, financial sector disturbances, and exchange rate volatility, recommending inflation control as the primary policy objective. In cases where oil price shocks drive inflation, the study suggests that policies should curb excessive exchange rate appreciation to prevent adverse effects such as "Dutch disease." Additionally, exchange rate interventions are deemed crucial in mitigating depreciation during oil price busts and preventing excessive appreciation during booms. Taken together, these studies emphasize the need for monetary policies tailored to the specific economic conditions of emerging markets. Factors such as financial exclusion and commodity dependence play a crucial role in determining the most effective policy frameworks, underscoring the need for adaptive strategies to stabilize inflation, exchange rates, and economic growth in these economies.

4.2 The Islamic Republic of Iran

Table 11: Summary of Studies on Monetary Policy for Iranian economy

Study	**Model and Data**	**Sectors Included**	**Shocks**
Kia (2006)	Estimated uses quarterly data (1970:Q1-2002:Q4)	Households, the government, and financial markets	Government deficits, external debt, exchange rates, oil prices, and sanctions.
Essay 3 in Salehi (2013) dissertation based on Gali and Monacelli (2005)	Estimated DSGE model	Households as consumers and capital owners, firms as producers, and monetary authorities (the central bank)	Inflation shocks, output shocks, and exchange rate shocks.
Rabee Hamedani and Pedram (2013) based on Romero et al. (2008)	Calibrated DSGE model based on the quarterly data of 1990-2011	Household, final good producing firms, an oil producing firm and a monetary authority.	oil price shocks
Heidarpour et al. (2015)	Estimated NK-DSGE	households, firms, government, and a central bank	overnment investment shocks, oil revenue shocks, technology shocks, and monetary base shocks
Continued on next page			

Study	Model and Data	Sectors Included	Shocks
Jalali-Naini and Naderain (2016) based on Leitemo and Söderström (2005) and Cavoli (2009)	Estimated NK-DSGE with quarterly data from 1987 to 2015	households, firms, and financial intermediaries, and incorporates structural features such as endogenous risk premiums and balance-sheet effects.	Terms-of-trade shocks, foreign demand shocks, exchange rate pass-through shocks, and monetary policy credibility shocks.
Esmailipour Masouleh et al. (2018) foolowing Gali and Monacelli (2005)	Estimated DSGE-BVAR model with quarterly data from 1990:2–2015:1	Household, Final Goods Producing Firm, Intermediate goods producing firms, Government and Central Bank	technology shocks, oil revenue shocks, exchange rate shocks and money supply shocks
Tabarraei et al. (2018)	calibrated NK-DSGE model with quarterly data from 1985-2015	Households, Final Good Producer, Intermediate Good Producers, Capital Producers, Oil Sector, a financial sector (Deposit Branches, Lending Branches), Government, Central Bank and national development fund	Technology Shocks, Oil Price Shock,
Mashhadizadeh et al. (2022) based on Gali and Monacelli (2005), Hove et al. (2015), and Cashin et al. (2004)	Calibrated NK-DSGE model with data 1991: Q1 to 2017: Q1	Household, Firms (Domestic firms as traded and non-traded, Foreign firms as non-tradable sector, intermediate sector, and final good sector), Monetary policy	Commodity Terms of Trade Shock, Export Sector Productivity Shock
Adib et al. (2024)	DSGE model Calibrated using Bayesian estimation methods and Generalized Method of Moments (GMM), based on historical time-series data (1999–2021), structured within a Social Accounting Matrix (SAM)	Firms, government, central bank, and the banking sect	Positive exchange rate shock

Kia (2006) emphasizes that fiscal discipline, predictable monetary policy, and a strong domestic currency are key to controlling inflation, as currency depreciation and unexpected money supply shocks drive price

increases. Fiscal prudence, through controlled spending and deficit management, reduces inflation, while higher government debt relative to GDP has a deflationary effect. Unexpected external borrowing fuels inflation, whereas anticipated external debt financing has no significant impact. Salehi (2013) advocates for inflation-targeting regimes with a modified Taylor rule, responding to inflation, output gaps, and exchange rate fluctuations. Exchange rate targeting stabilizes currency but limits monetary independence, while monetary aggregate targeting struggles with demand volatility. Rabee Hamedani and Pedram (2013) finds domestic inflation targeting more effective than CPI targeting, noting that including exchange rate adjustments in monetary policy increases economic volatility for domestic producers.

Heidarpour et al. (2015) highlights the importance of managing oil revenue shocks through strategic public investment and monetary policy adjustments, recommending a monetary policy rule that stabilizes inflation and minimizes output gap deviations. This study underscores the role of government expenditure in interacting with oil revenues to maintain macroeconomic stability. On the other hand, Jalali-Naini and Naderain (2016) identifies Real Exchange Rate Targeting (RERT) as the optimal policy for financially vulnerable economies like Iran, as it stabilizes key macroeconomic variables and minimizes social losses. The study also evaluates alternative policies, such as Flexible Domestic Inflation Targeting (FDIT) and Flexible CPI Inflation Targeting (FCIT), which, while viable, result in higher economic volatility. Additionally, it emphasizes the necessity of currency market interventions during adverse oil price shocks to prevent contractionary devaluations, reflecting Iran's cautious approach to floating exchange rates.

Esmailipour Masouleh et al. (2018) as using Hyprid models, finds that enhancing production technology is crucial for sustained output growth and inflation control. Although money supply shocks, unexpected changes in the money supply, can temporarily boost production, they are not a sustainable policy tool, as their long-term effects are inflationary and contractionary, reducing consumption and growth. Oil revenue shocks, although beneficial for investment, also pose inflation risks. The study recommends avoiding reliance on unpredictable monetary interventions and instead advocates for stable policies, such as promoting technological advancement and adjusting government spending, to manage economic shocks effectively.

Tabarraei et al. (2018) (Results do not alter when the calibration is based on other oil economies) emphasizes the importance of a procyclical policy to maintain price stability, support the non-oil sector, and mitigate excessive fluctuations in production factors. The study also underscores the role of the banking sector in amplifying oil shocks due to sectoral frictions and recommends stabilizing exchange rate policy to counteract Dutch disease effects and improve model dynamics. Similarly, Mashhadizadeh et al. (2022) identified CPI Inflation Targeting (CIT) as the optimal policy for stabilizing both commodity terms of trade shocks and export productivity shocks, outperforming alternatives such as Non-Traded Inflation Targeting (NTIT) and Exchange Rate Targeting (ET). Furthermore, Adib et al. (2024) focuses on the effects of positive exchange rate shocks, advocating for policies that confine banks to their core functions, strengthen financial market regulations, reduce speculative activities, and enhance coordination between the banking sector and the central bank. This study also suggests adopting inflation targeting to stabilize prices and addressing inefficiencies in financial markets that exacerbate economic shocks. Together, these findings underscore the importance of targeted monetary policies, particularly targeting inflation and stabilizing exchange rates, in managing shocks and ensuring macroeconomic stability in an oil-exporting economy like Iran.

4.3 The Russian Federation

Table 12: Summary of Studies on Monetary Policy for Russian economy

Study	Model and Data	Sectors Included	Shocks
Continued on next page			

Study	Model and Data	Sectors Included	Shocks
Sinyakov and Yudaeva (2016)	Estimated modified IS-MP general equilibrium model	tradable sector (including oil and other commodities) and the non-tradable sector (such as services and domestic industries)	decline in global oil prices, increased risk premiums due to geopolitical factors and tighter U.S. monetary policy, and peaking foreign debt payments by Russian firms
U. Peiris et al. (2020) developed from Gali and Monacelli (2005), and Gertler et al. (2007)	Estimated NK-DSGE model with (2001–2018) data	banking sector, leveraged domestic firms, intermediate goods producers, domestically-priced final goods producers (retailers), and capital producers	international oil price shocks, monetary policy shocks, total factor productivity shocks, shocks to foreign bond interest rate premia, and saver time-preference shocks.
Kozlovtceva et al. (2020)	Estimated DSGE model, panel VAR, and GMM methods.	Households, firms producing tradable and non-tradable goods, fiscal and monetary authorities, and the external economy.	oil price changes, exchange rate volatility, and credit supply constraints.
Jin and Xiong (2021)	Markov-switching estimated NK-DSGE model with data (2003 Q1-2016 Q4)	Households, Producers (Non-oil sector final goods producer, Non-oil sector intermediate goods producer, Oil sector producers), Exporter, Capital producer, Monetary and fiscal policy, Government	Oil Price Shock, Oil resource , Consumption Preference , Government Spending , Monetary Policy , Technology , Foreign Demand , World Interest Rate , Risk Premium
M. Peiris et al. (2024)	Estimated NK-DSGE using data (2001 to 2019)	Households (savers and borrowers), firms (wholesale, intermediate, and final goods producers), banks, the central bank and the government	commodity price , interest rate , domestic investment , credit , exchange rate , productivity , government spending , and financial

Sinyakov and Yudaeva (2016) emphasizes that a floating exchange rate, combined with provisions for for-

eign exchange (FX) liquidity and temporary monetary tightening, is the optimal policy response to shocks such as declining oil prices, geopolitical risk premiums, and foreign debt payments. While sterilized FX interventions and fiscal adjustments are considered, the study concludes that a flexible exchange rate is the most effective tool for economic stabilization, with contractionary monetary policy necessary to control inflation. Similarly, Kozlovtceva et al. (2020) finds that a flexible inflation-targeting framework, incorporating financial stability considerations, outperforms pure Inflation Targeting (IT) in high commodity price volatility scenarios. Leaning Against the Wind (LAW) policies, which raise interest rates to mitigate financial instability risks, are effective but come at the cost of higher macroeconomic volatility and trade-offs with inflation and output stability.

Further insights are provided by U. Peiris et al. (2020), which underscores the prevalence of "Dutch Disease" and recommends macroprudential tools to address financial instability caused by commodity price fluctuations. While monetary policy stabilizes inflation, it fails to prevent credit cycles, and capital requirements can restrict lending during downturns. Jin and Xiong (2021) supports a passive monetary and active fiscal (PM/AF) regime, which aids debt management through inflation and exchange rate depreciation, particularly in response to oil price shocks and other external factors. Lastly, M. Peiris et al. (2024) highlights the effectiveness of LAW policies in stabilizing credit conditions, reducing debt volatility, and countering interest rate and investment shocks, albeit with increased output and inflation volatility. The study also emphasizes the role of macroprudential regulations and flexible exchange rates in absorbing shocks, with monetary easing supporting economic recovery. Combining these measures with LAW enhances overall economic stability, making it a robust policy framework for exporting economies facing volatile commodity markets and external shocks.

4.4 Azerbaijan

Table 13: Summary of Studies on Monetary Policy for Azerbaijan economy

Study	Model and Data	Sectors Included	Shocks
Huseynov and Ahmadov (2014)	Calibrated NK-DSGE model, characteristics of oil-rich economies such as Russia, Kazakhstan and Azerbaijan.	Household sector, non-oil production sector (intermediate and final goods producers), oil sector, fiscal sector (government), monetary authority, Oil Fund, and the external sector	oil price shocks
Essay 1 in Aliyev (2015)	Calibrated DSGE model	households, firms, fiscal and monetary authorities	natural resource revenues and permanent positive shocks to foreign revenues

The analysis of monetary and fiscal policies in Azerbaijan, as well as other oil-rich economies such as Russia and Kazakhstan, reveals several key insights for managing economic stability in resource-exporting countries. Huseynov and Ahmadov (2014) highlights the importance of rule-based fiscal policies in mitigating economic fluctuations caused by oil price shocks. By allocating oil revenues to consumption and public investment, governments can boost aggregate demand in the short term and enhance productivity in the medium term through infrastructure development. Additionally, the study underscores the partial effectiveness of monetary policy in stabilizing economic fluctuations, even under a fixed exchange rate regime.

Three monetary policy specifications—the Taylor rule, money growth rule, and money market disequilibrium—demonstrate similar macroeconomic responses, emphasizing the need for a coordinated fiscal and monetary policy framework to achieve economic stability.

Further insights from Aliyev (2015) suggest that a fixed exchange rate regime is particularly effective in managing natural resource revenues and permanent positive shocks to foreign revenues. This regime outperforms alternatives such as laissez-faire and price level targeting, especially in contexts of undisciplined fiscal conditions. A fixed exchange rate helps stabilize aggregate consumption, protects the tradable sector, and mitigates the adverse effects of Dutch disease. While price level targeting can provide some stability, laissez-faire policies tend to result in greater macroeconomic volatility. These findings collectively suggest that for resource-exporting economies like Azerbaijan, a fixed exchange rate regime, combined with disciplined fiscal policies and strategic allocation of resource revenues, offers the most effective approach to managing economic shocks and ensuring long-term stability.

4.5 Kazakhstan

Table 14: Summary of Studies on Monetary Policy for Kazakhstani economy

Study	**Model and Data**	**Sectors Included**	**Shocks**
Algozhina (2022a) extended from Gali and Monacelli (2005)	Calibrated DSGE model quarterly data from 1994Q1 to 2012Q2 study	households, non-oil firms in monopolistic markets, the oil sector, a central bank, and the government.	world oil price fluctuations and foreign output changes
Sarkambayeva and Sailaubekov (2024)	Uisng partial equilibrium model which is Calibrated IS-LM-BP model quarterly data for 2008 Q1-2022 Q4	"Goods and services market, money market, balance of payments"	exchange rate regime changes and macroeconomic policy shifts, are considered, while oil price fluctuations are discussed in relation to economic volatility.

Algozhina (2022a) finds that CPI targeting under a managed exchange rate stabilizes inflation and output, while price-level path targeting (PPT) is more effective for oil price shocks. The study highlights the importance of countercyclical fiscal policy, as flexible exchange rates alone are insufficient for mitigating terms of trade shocks. Similarly, Sarkambayeva and Sailaubekov (2024) examines Kazakhstan's macroeconomic policies using an IS-LM-BP model, suggesting a 6% equilibrium real interest rate and highlighting challenges in inflation targeting due to structural uncertainties. The study also emphasizes the role of exchange rate adjustments and capital mobility restrictions in ensuring stability. Together, these findings suggest that a mix of PPT, reserve ratio adjustments, countercyclical fiscal policies, and exchange rate coordination is crucial for stabilizing resource-exporting economies amid external shocks and oil price fluctuations.

4.6 Asian countries

Table 15: Summary of Studies on Monetary Policy for the Asian Economy

Study	Country	Model and Data	Sectors Included	Shocks
Shangle and Solaymani (2020) follows Solaymani (2019)	Malaysia	computable general equilibrium (CGE) model	covers 22 economic sectors, including agriculture, crude oil and natural gas, mining, food processing, textiles, petroleum refining, chemicals, transport equipment, construction, ICT, finance, and public administration.	examines two primary shocks: a 50% rise and a 50% fall in global oil prices.
Chafik (2023)	United Arab Emirates (UAE)	Estimated semi-structural New Keynesian Model on real-world data	output (IS curve), inflation (Phillips curve), unemployment (Okun's Law), monetary conditions, and external factors including oil prices and global demand.	demand shocks, inflation shocks, U.S. nominal interest rate shocks, and oil price shocks.
Doojav and Gantumur (2023) developed from Adrian et al. (2020)	Mongolia	Estimated NK-DSGE model quarterly data from 2005Q1 to 2022Q2	monetary policy, macroprudential policy, foreign exchange intervention, capital flow management, and fiscal policy	Commodity export demand shocks Commodity export price shocks Oil price shocks Risk premium shocks

Shangle and Solaymani (2020) finds that expansionary monetary policy, particularly a reserve ratio reduction, effectively stabilizes output, investment, and employment in Malaysia amid oil price fluctuations, while interest rate adjustments and fiscal measures help mitigate economic instability. Similarly, Chafik (2023) highlights the importance of adaptive monetary frameworks in exporting economies, showing that in the UAE's fixed exchange rate regime, integrating a market-expected exchange rate (MEER) mechanism into interest rate decisions helps correct exchange rate misalignment and stabilize economic imbalances. The study underscores that policymakers should not rely solely on interest rate adjustments but also account for oil prices, exchange rate expectations, and domestic conditions to manage shocks effectively. Together, these findings emphasize the need for flexible, well-calibrated monetary policies that combine exchange rate mechanisms, reserve ratio adjustments, and fiscal coordination to enhance economic stability in resource-exporting economies.

Doojav and Gantumur (2023) emphasizes the need for a coordinated policy mix to manage macroeconomic volatility from external shocks. Monetary policy stabilizes inflation and output, while FX interventions (FXI) and capital flow management (CFM) support monetary autonomy and import price stability. Fiscal and macroprudential policies help counter destabilizing effects, but poor coordination can lead to suboptimal outcomes. Institutional constraints, such as reserve limitations, must also be considered. A well-calibrated framework integrating monetary, FX, fiscal, and macroprudential policies is crucial for stability in exporting economies.

4.7 Latin America

Table 16: Summary of Studies on Monetary Policy for the Latin American Economies

Study	Country	Model and Data	Sectors Included	Shocks
Soto and Medina (2005)	Chile	Estimated DSGE model with quarterly data (1990:Q1-2005:Q1)	Household Domestic production, Foreign sector, monetary policy.	oil price fluctuations, wage rigidities, and demand shocks.
Essay 2 of Villarreal (2007)	Mexico	Estimated DSGE model with (1995:Q2-2006:Q4)	Household, final good producing firms, an oil-producing firm, and a monetary authority.	oil price shocks, technology shocks, labor supply shocks and monetary policy shocks.
Argűello et al. (2013)	Colombia fuel-exporting countries.	Calibrated Computable General Equilibrium (CGE) , (DSGE) models, and estimated Factor Analysis Vector Autoregression (FAVAR) model.	Agriculture, Chemicals, Coal, Coffee, Infrastructure, Machinery, Manufacturing, Minerals, Oil, Refined Oil, Services, and Transport Equipment.	oil price shocks, exchange rate shocks, macroeconomic shocks (monetary policy and macroprudential policy shocks), and labour market shocks.
Hamann et al. (2016)	Colombia	Estimated three-sector DSGE model with period (1921-2013)	Households, Oil Extraction, tradable and non-tradable sectors, incomplete foreign financial assets market, Central Bank	Permanent and transitory oil price shocks.
Medina and Soto (2016), employing a DSGE model inspired by Smets and Wouters (2007), Christiano et al. (2005), Altig et al. (2011)	Chile a copper exporting country	calibrated using data from 2001 to 2015 DSGE model	Households as Ricardian Non-Ricardian , firms (Assembly of intermediate goods, Producers of intermediate goods), Import goods retailers, Commodity and foreign sectors, Monetary policy, Fiscal policy	commodity-price shocks under different fiscal rules
Carrasco and Florián Hoyle (2021)	Peru	Estimated NK-DSGE model	banking sector, which finances firms through domestic and foreign currency loans, and the commodity sector, which responds to global commodity prices and external demand	foreign interest rates, global demand, and commodity price fluctuations

Soto and Medina (2005) finds that a Taylor-type rule is the optimal monetary policy for Chile, where

the central bank responds to core inflation deviations, ensuring a balanced reaction to oil price shocks. Alternative approaches, such as wage neutralization, improve real allocation but significantly raise inflation, while CPI inflation targeting is more restrictive and can depress output if pursued too aggressively. These findings highlight the trade-offs between inflation control and economic stability, emphasizing the need for a flexible monetary policy framework.

Expanding on this, Villarreal (2007) and Argűello et al. (2013) analyze optimal monetary policies for Latin American exporting economies. Villarreal (2007) supports a Taylor-type rule that responds to inflation and the output gap, incorporating oil revenues, making it more effective than rules based solely on final goods production. The study highlights the importance of a flexible policy framework to manage shocks such as oil price fluctuations and labor supply shifts. Meanwhile, Argűello et al. (2013) stresses the role of macroprudential policies in protecting tradable sectors from exchange rate appreciations by using countercyclical credit controls and infrastructure investments for rural workers. The study opposes fixed exchange rate interventions, arguing they are ineffective against fuel price shocks, and instead promotes monetary and financial stability through targeted macroprudential tools. Together, these studies underscore the need for a sectorally resilient and adaptable policy mix to mitigate external shocks and maintain macroeconomic stability in resource-exporting economies.

The studies provide key insights into the monetary policies of Latin American commodity-exporting economies, emphasizing strategies to mitigate external shocks. Hamann et al. (2016) highlights the benefits of targeting non-tradable inflation to manage oil price shocks, allowing for greater flexibility while minimizing economic disruptions. By addressing nominal rigidities, this approach reduces short-term volatility from exchange rate pass-through effects. However, the study acknowledges trade-offs between stabilizing inflation and preventing economic contraction, as interest rate adjustments must carefully balance inflation control with GDP and employment stability.

Similarly, Medina and Soto (2016) and Carrasco and Florián Hoyle (2021) explore effective stabilization policies in Chile and Peru. Medina and Soto (2016) underscores the role of flexible exchange rates and countercyclical fiscal policies, such as Chile's structural balance rule, in smoothing economic adjustments and mitigating commodity price volatility. While expansionary fiscal policies can stimulate short-term growth, they may also increase macroeconomic instability, reinforcing the need for a balanced approach. Meanwhile, Carrasco and Florián Hoyle (2021) advocates for FX intervention regimes in Peru, where sterilized interventions help stabilize exchange rate fluctuations, reducing financial volatility and currency mismatches. Alternative approaches, such as flexible exchange rates or the Extended Taylor Rule, are found to heighten volatility and destabilize investment and credit. These findings highlight the importance of coordinated monetary and fiscal policies, tailored exchange rate strategies, and financial stability tools to enhance resilience in resource-exporting economies.

Emerging Market Economies (EME)

Table 17: Summary of Studies on Monetary Policy for Emerging market economies

Study	Model and Data	Sectors Included	Shocks
Essay 1 of Villarreal (2007) dissertation	Oil-producing economy,	Household, a final good producing firm, and an oil-producing firm, monetary authority	oil price shocks
Continued on next page			

Study	Model and Data	Sectors Included	Shocks
Villarreal (2007) based on model used in essay 1 in Villarreal (2007) and Soto and Medina (2005)	Oil-producing economy	household, firms, oil sector, Foreign economy (foreign demand for domestic goods), monetary policy	Positive and negative oil shocks.

Essay 1 of Villarreal (2007) examines monetary policy in oil-producing Emerging Market Economies (EMEs), including Saudi Arabia, Russia, Norway, Iran, Venezuela, UAE, Kuwait, Nigeria, Mexico, Algeria, Iraq, Libya, Kazakhstan, and Qatar. The study begins with a static model and extends to a calibrated DSGE for deeper analysis. Oil price shocks are the primary disturbance. The optimal policy, a Taylor rule, suggests responding to inflation and the consumption gap improves welfare but increases non-oil output volatility.

Essay 3 in Villarreal (2007) building on the model from Essay 1 and Soto and Medina (2005), the study suggests that targeting core inflation rather than CPI inflation is a more effective monetary policy, as it minimizes contractionary effects and stabilizes the economy. Fiscal stabilization tools, such as savings funds in Chile and Norway, help manage oil revenue volatility. Exchange rate management mitigates real depreciation from oil price shocks, while economic diversification through foreign asset investment reduces reliance on oil exports. Future research should explore asymmetric effects of oil price shocks, as price increases typically have stronger impacts than decreases, and integrate oil funds into macroeconomic models for deeper analysis. The overarching goal is to stabilize inflation, manage fiscal volatility, and enhance economic diversification.

5 Monetary Policy in developed economies

Table 18: Summary of Studies on Monetary Policy for the Developed Economies

Study	Country	Model and Data	Sectors Included	Shocks
Essay 3 in Hou (2010) dissertation	Canada and the U.S.	Estimated two-country DSGE model	Households, firms (Domestic Production), Domestic Importers, Oil Producing Firms, Foreign Economy, and monetary authorities.	Oil price changes and monetary policy disturbances.
Coletti et al. (2021)	Canada, U.S., Emerging Asia, Commodity Exporters, Other Countries	Calibrated global New-Keynesian DSGE model.	Households , Final Goods , Intermediate Goods Sector , Commodities Sector , Labor and Capital Markets, International Trade .	Foreign Demand Shock, Foreign Oil Supply Shock, Foreign Non-Oil Commodity Supply Shock.

Continued on next page

Study	Country	Model and Data	Sectors Included	Shocks
Ferrero and Seneca (2019), based on Gali and Monacelli (2005)	tailored for developed resource-rich OECD countries.	Calibrated NK-DSGE model by Norwegian data	Households, mainland firms, and an offshore oil. sector	Oil price fluctuations, productivity changes, and terms-of-trade inefficiencies.
Alstadheim et al. (2021)	Australia, Canada, New Zealand, Norway, Sweden, and the UK.	Estimated Markov-Switching DSGE model with quarterly data spanning (1964-2015)	Households, firms, and government	terms-of-trade variations, monetary (interest rate) shocks, and productivity disturbances.

Essay 3 in Hou (2010) supports core inflation targeting to stabilize output and prices in oil-exporting countries, minimizing overreactions to oil price volatility. It highlights domestic monetary policy as the key transmission mechanism, with U.S. policy influencing only 6% of output changes. Structural factors, like low nominal rigidities, can amplify oil shocks without adaptive frameworks. Similarly, Al-Abri (2014) finds that flexible exchange rates improve welfare under producer currency pricing (PCP) by stabilizing consumption and shielding against external shocks. However, effective implementation requires anticipating shocks and foreign policy responses. Given institutional constraints, a basket peg offers a more stable alternative than a unilateral U.S. dollar peg. Both studies emphasize tailored monetary policies, structural adaptability, and exchange rate flexibility for oil-exporting economies.

Coletti et al. (2021) finds Inflation Targeting (IT) optimal for commodity-exporting economies, as it minimizes macroeconomic volatility by overlooking short-term oil price fluctuations. In contrast, Price Level Targeting (PLT) is less effective, as it increases inflation and output variability, making it unsuitable for persistent commodity price shocks. Ferrero and Seneca (2019) highlights the trade-off between stabilizing domestic inflation and the output gap, driven by inefficiencies in terms of trade. The study advocates for lowering interest rates after commodity price drops to mitigate slowdowns, as rigid policies like CPI targeting or exchange rate pegs can deepen recessions. A flexible domestic inflation target emerges as the best approach, balancing stability without exacerbating downturns.

Alstadheim et al. (2021) employs a Markov-Switching Rational Expectations model within a DSGE framework to investigate the relationship between exchange rate fluctuations and monetary policy in six small open economies, The findings suggest that aggressive central bank responses to exchange rate movements can exacerbate terms-of-trade shocks. Notably, Norway's strong exchange rate stabilization policy is shown to inadvertently increase volatility in domestic economic variables. The study advocates for a flexible inflation targeting approach, where moderate exchange rate responses contribute to greater economic stability in small open economies.

Table 19: Summary of Studies on Monetary Policy for the Developed Economies

Study	Country	Model and Data	Sectors Included	Shocks
Hevia and Nicolini (2013)	Norway and Chile	NK-DSGE model	Household, monetary and fiscal policy, firms (Final and intermediate Good), Commodities,foreign sector.	terms-of-trade shocks, commodity price shocks (for both importable and exportable commodities), and productivity shocks.
Al-Abri (2014)	Small oil exporting nation, the United States	NK-DSGE model	Traded, non-traded, and primary commodity (crude oil).	uncertainty include stochastic monetary (demand), productivity (real), and oil price (supply) shocks
Wills (2014), developed from Gali and Monacelli (2005), and Gali and Monacelli (2008)	Australia, Canada, and Norway	Calibrated New Keynesian DSGE model	Households, firms, and the government and oil spending	Anticipated oil production changes and unanticipated oil price shocks
Yamout (2022)	Australia	Estimated DSGE model using an with quarterly Australian data (1993-2017)	Household, three key sectors: commodities, non-tradeables, and tradeables, firm (final, intermediate importer, exporter) , monetary policy, Foreign Sector	commodity price fluctuations, productivity disturbances, and monetary policy adjustments

Similar developed economies show almost same features, according to Cashin et al. (2004), economic cycles in four developed, commodity-exporting countries, namely Australia, Canada, Norway, and New Zealand highlighting patterns in commodity price volatility, exchange rates, and trade balance. Commodity prices are highly volatile in all four, especially in Norway, although Australia and New Zealand experience the most exchange rate volatility.

Hevia and Nicolini (2013) underscores the importance of nominal exchange rate flexibility in stabilizing domestic marginal costs amid external shocks, particularly volatile commodity prices, especially when fiscal instruments remain rigid. This necessitates coordinated monetary and fiscal policies, utilizing tools like tariffs, labor income taxes, and foreign asset return taxes to ensure macroeconomic stability, a strategy particularly relevant for small open economies like Chile and Norway or highly volatile economies like Turkey. Similarly, Wills (2014) examines monetary policy responses to oil discoveries, advocating for immediate currency appreciation to adjust terms of trade without price distortions and forward-looking interest rate management—loosening rates pre-revenue to curb anticipatory inflation and tightening them post-revenue to stabilize prices. This approach outperforms exchange rate pegs and simple Taylor rules, which risk stagflation and recessions due to premature price hikes, while central bank credibility remains crucial to avoiding Dutch disease and deflationary biases, a factor explaining the prevalence of currency pegs among oil exporters.

Extending this perspective, Yamout (2022) emphasizes the necessity of monetary policies that integrate commodity price dynamics, advocating for flexible exchange rate regimes to mitigate output volatility, as persistent commodity price changes significantly impact the output gap and resource reallocation across sectors.

Table 20: Summary of Studies on Monetary Policy for the Developed Economies

Study	Country	Model and Data	Sectors Included	Shocks
Bergholt (2014)	Norway	Calibrated New Keynesian DSGE model using Norwegian data	oil, manufacturing, and services	Oil price fluctuations, domestic productivity changes in the manufacturing and service sectors, and foreign productivity disturbances
Taghizadeh-Hesary and Yoshino (2016), adapted from Yoshino et al. (2012)	U.S.	Calibrated NK-DSGE model Using data spanning (1960–2011)	Households and firms, capturing the interactions of energy consumption and production	oil price shocks
Bergholt et al. (2023)	Norway	calibrated DSGE model with Norwegian data from (1970–2020)	Households, Firms (traded or non-traded sector domestically), Oil, and trade sector.	permanent export revenue shocks

Bergholt (2014) emphasize that Ramsey-optimal monetary policy assigns a high weight to nominal wage stability. During oil booms, the policy calls for aggressive increases in the policy rate, which amplifies exchange rate appreciation and curtails cross-sectoral distortions by stabilizing wages•. Conversely, monetary policies aimed at stabilizing exchange rate fluctuations or managing oil sector impulses amplify volatility in non-oil sectors, ultimately harming overall welfare•. To approximate the optimal policy, the study suggests the use of operational Taylor rules with high interest rate inertia, targeting a mix of wage and consumer price stability.

Building on similar themes, Taghizadeh-Hesary and Yoshino (2016), analyzes the global dynamics between energy producers and consumers, concludes that oil price shocks primarily impact the economy through the demand side, reducing household consumption expenditures and energy consumption. This aligns with earlier research (e.g., Hamilton 1988, Bernanke 2006), which emphasizes the demand channel as the dominant transmission mechanism for oil price shocks. The study's optimal policy recommendations emphasize the importance of maintaining positive real interest rates to stabilize oil markets and mitigate the inflationary and growth-inhibiting effects of oil price shocks. Aggressive monetary easing, particularly policies that lead to low interest rates, is found to exacerbate oil price shocks by stimulating credit demand, aggregate demand, and oil consumption, which in turn drives up oil prices and hinders economic growth. additionally, the study highlights the elasticity of demand and supply to oil prices. While demand is found to be elastic to income and inelastic to price in the short run, supply is elastic to price but less so than demand. This underscores the importance of restrained monetary policies to prevent excessive demand-driven oil price

increases and to ensure stability in oil markets. The study argues that achieving stability in oil markets requires a combination of monetary policy restraint and positive real interest rates, as well as measures to address the rigidities in oil supply.

Expanding on these findings, Bergholt et al. (2023) identifies nominal wage growth targeting as the optimal monetary policy, as it ensures a balanced transition by allowing sufficient exchange rate depreciation while preventing unemployment and facilitating efficient capital and labor reallocation. In contrast, fixed exchange rate regimes delay structural adjustments, leading to prolonged unemployment and slow sectoral shifts. CPI inflation targeting forces the central bank to raise interest rates, worsening unemployment and slowing necessary capital movement. Meanwhile, non-traded inflation targeting is overly expansionary, causing excessive exchange rate depreciation and inefficiencies in labor and capital allocation. Among these, nominal wage growth targeting achieves the best balance, effectively supporting economic adjustments while minimizing welfare losses.

Table 21: Summary of Studies on Monetary Policy for the Algerian Economy

Study	**Country**	**Model and Data**	**Sectors Included**	**Shocks**
Zhang et al. (2022) builds on the Meese and Rogoff (1983)	Canada, Norway, and Australia	Vector Autoregressive (VAR), GARCH-GJR, and General Equilibrium Models (GEM)	Households, firms, and monetary authorities,	Oil price shocks
Dieppe et al. (2018)	Euro area, US, Japan, UK, China, oil-exporting economies, Emerging Asia, and a rest-of-the-world block.	Calibrated semi-structural, global multi-country macroeconomic model	Household, investment, government spending, and net exports, with financial spillovers captured through equity prices, interbank credit spreads, bank-lending tightness, and sovereign risk premia.	US monetary policy tightening, a slowdown in Chinese demand, and oil price fluctuations.

also introduction chapter 3 in Hou (2010) The DSGE model aligns closely with the VAR model in capturing output, CPI inflation, and interest rate responses to oil price shocks, although it slightly underestimates inflation. Both models demonstrate a positive impact on demand and production, validating the reliability of the DSGE model.

Moving to Canada, Norway, and Australia, Zhang et al. (2022) builds on the Meese and Rogoff (1983) Zhang et al. (2022) build upon the Meese and Rogoff (1983) framework by integrating Vector Autoregressive (VAR), GARCH-GJR, and General Equilibrium Models (GEM) to analyze the impact of oil price volatility on exchange rates and inflation in Canada, Norway, and Australia. The VAR and GARCH-GJR models are estimated using Bayesian methods, while the General Equilibrium Model (GEM) is calibrated based on previous studies. These models incorporate key economic sectors, including households, firms, and mone-

tary authorities, to assess how oil price shocks influence inflationary trends and exchange rate dynamics. The study finds pronounced short-term fluctuations in exchange rates driven by oil price volatility, with limited effectiveness of monetary policies in stabilizing these rapid changes. The results emphasize the need for resilient monetary policy frameworks to address medium- and long-term effects, while acknowledging the challenges of managing high-frequency fluctuations in commodity-exporting economies. The study also highlights that exchange rate forecasting deteriorates over longer timeframes, reinforcing the short-term predictability of oil price shocks on currency movements

Dieppe et al. (2018) examines shocks from U.S. monetary policy tightening, a slowdown in Chinese demand, and oil price fluctuations. It recommends countercyclical fiscal policies for oil-exporting economies during oil price drops and inflation-targeting monetary policies for advanced economies to manage spillovers. The study highlights the advantages of flexible monetary policies over fixed exchange rate regimes for global stability. It finds that emerging economies relying solely on monetary policy, without fiscal and structural adjustments, struggle to mitigate spillovers from major economies like the U.S. Additionally, fixed exchange rates, procyclical fiscal policies, and rigid economic frameworks are deemed suboptimal for economic stability.

6 Fiscal policy and political regimes

6.1 Developing Economies

Effective coordination between fiscal and monetary policies is essential for ensuring macroeconomic stability, particularly in economies exposed to external shocks. While monetary policy plays a central role in stabilizing inflation and managing economic cycles, its effectiveness is significantly influenced by fiscal measures. As highlighted in previous discussions, numerous studies emphasize that fiscal policy not only complements monetary policy but also acts as a critical mechanism for reinforcing economic resilience. This section explores the role of fiscal policy in coordinating with monetary measures, particularly in resource-dependent economies, where financial globalization and volatile commodity prices present persistent challenges.

Financial globalization improves capital allocation efficiency but constrains monetary autonomy under fixed exchange rate regimes, as noted by Kose et al. (2006). While flexible exchange rates restore policy independence, they can increase economic volatility, making institutional frameworks and inflation-targeting mechanisms crucial for stability. In oil-exporting economies, successful inflation targeting depends on fiscal discipline, financial stability, and institutional independence Salehi (2013). These prerequisites mitigate challenges such as output instability and fiscal dominance, reinforcing the broader role of fiscal policy in macroeconomic coordination. Foundational studies, including Saxegaard (2006) and Anand (2010), further emphasize the financial accelerator framework developed by Bernanke (1999), which underscores the link between firm balance sheets and borrowing costs, offering critical insights for emerging economies like India.

For resource-dependent economies, a well-structured fiscal strategy is vital to aligning monetary policy with long-term growth objectives. As demonstrated by Ghadimi (2015), reinvesting oil revenues and adopting targeted investment strategies through a dynamic computable general equilibrium (DCGE) model can enhance economic growth while mitigating inflationary risks. Additionally, fiscal-monetary coordination mechanisms such as stabilization funds and rule-based fiscal spending, advocated by Huseynov and Ahmadov (2014), help maintain medium-term productivity and long-term macroeconomic stability, as exemplified by Azerbaijan's SOFAZ fund. Complementary to this, Algozhina (2022a) show that countercyclical fiscal policies, when aligned with inflation targeting and managed exchange rates, reduce trade shocks and output volatility. Building on these insights, Queen Esther and Adams (2024) argue for an active monetary and passive fiscal policy mix, where fiscal policy remains procyclical while monetary policy responds strongly to inflation and output fluctuations. These perspectives highlight the need for adaptable fiscal strategies that work in tandem with monetary policy to achieve sustainable economic resilience in resource-reliant economies.

6.1.1 African economies

African economies require coordinated fiscal and monetary policies to manage oil price fluctuations and resource dependency effectively. Fiscal measures are essential for stabilizing economies; for example, in Mozambique, government intervention helped address real exchange rate appreciation Bouakez and Vencatachellum (2007b). Moreover, aligning fiscal and monetary policies allowed Mozambique to manage liquidity through exchange rate operations while efficiently utilizing foreign aid (10–20% of GDP) to expand education, healthcare, and economic growth Peiris and Clément (2008) and Peiris (2008).

Similarly, in South Sudan, revenue diversification and financial reforms are necessary to reduce oil dependency and strengthen economic resilience Ssemwanga (2014). In the same vein, Uganda balances public investment with sovereign wealth savings to mitigate Dutch disease and stabilize its trade balance Kopoin et al. (2015), while Nigeria adopts countercyclical public investment strategies to support monetary stability Iklaga (2016). Without these measures, monetary policy alone would be insufficient to manage resource dependency and economic shocks.

Likewise, in North Africa, Algeria benefits from productivity-enhancing fiscal policies, a fixed exchange rate, and a stabilization fund to counter Dutch disease Allegret et al. (2018). Meanwhile, Libya integrates fiscal rules with exchange rate policies to stabilize macroeconomic variables and promote non-oil sector growth Ben-Naser et al. (2018). Furthermore, Nigeria's oil-driven economy faces short-term oil price shocks, while domestic supply factors drive medium-term inflation Babatunde S Omotosho (2019). Taken together, these cases underscore that fiscal and monetary policies must work in tandem to ensure stability, foster diversification, and mitigate external shocks in oil-rich African economies.

The importance of integrate fiscal and monetary policies with macroprudential tools and foreign exchange interventions to address systemic risks effectively. Tobal and Menna (2020). In Nigeria, structural reforms are crucial for reducing oil dependence Oladunni (2020a), while inflation targeting supported by a flexible exchange rate enhances monetary policy effectiveness Chuku (2020). Moreover, countercyclical fiscal policies, financial inclusion initiatives, and Sovereign Wealth Funds play a stabilizing role in mitigating GDP and inflation volatility, especially following subsidy removals S. B. Omotosho (2021).

To address fiscal volatility, fiscal rules that exclude oil revenues can help reduce budgetary fluctuations and support more accommodative monetary policies S. B. Omotosho (2021). Across five African nations, mixed monetary frameworks—such as inflation targeting and nominal GDP targeting—are recommended to enhance resilience against commodity price shocks Rasaki and Chukwu (2024). Long-term strategies for resource-dependent economies emphasize domestic investment. For example, prioritizing infrastructure investment over sovereign wealth savings in CEMAC nations yields higher socio-economic returns despite absorptive capacity constraints Algozhina (2022b). Likewise, countercyclical public investment and fiscal-monetary coordination help mitigate Dutch disease and promote economic diversification in Algeria and Angola Benkhodja et al. (2023) and Shvets (2024).

Furthermore, fiscal procyclicality weakens monetary policy effectiveness, as demonstrated by a DSGE model analysis Omotosho and Tumala (2024). Aligning fiscal prudence with monetary strategies is therefore essential for addressing structural inefficiencies and ensuring macroeconomic stability. In Ethiopia, government spending, taxation rules, and foreign exchange market interventions highlight key structural constraints in the financial system Melesse (2016). While DSGE models provide valuable insights, their limitations in capturing economic complexities suggest integrating alternative approaches, such as progressive taxation, to better address structural inequalities in policy-making.

6.1.2 Iran

The effective coordination of fiscal and monetary policies is crucial for stabilizing Iran's oil-dependent economy and fostering sustainable growth. As highlighted by Schmitt-Grohé and Uribe (2004), prioritizing

monetary growth rates over nominal interest rates aligns with Iran's unique economic structure, while complementary fiscal rules linking taxes to oil revenues, expenditures, and public debt ensure a balanced macroeconomic approach. Fiscal policies reduce production costs and incentivize labor, whereas monetary policies drive aggregate demand, creating a synergistic effect. Long-term inflation control, as emphasized by Kia (2006), requires fiscal discipline and institutional reforms, particularly in the face of external shocks such as sanctions and volatile oil prices, which dominate short-term economic dynamics.

Studies like Heidarpour et al. (2015) demonstrate that government investment enhances public capital, employment, and production while mitigating inflationary pressures. However, Naini and Naderian (2019) warns against procyclical fiscal policies, advocating for structural fiscal rules and stabilization funds to counteract Dutch disease and reduce economic volatility. Oil stabilization funds (OSFs), as noted by Jalali-Naini and Naderian (2020), are essential for addressing fiscal procyclicality and supporting central bank efforts in inflation and output stabilization. Transmission mechanisms such as interest rate parity and expenditure-switching further underscore the adverse effects of incomplete risk-sharing and Dutch disease on non-oil sectors.

To achieve economic resilience, targeted tax cuts and expansionary fiscal measures, as recommended by Rousta et al. (2020), can balance growth, while Sharifnezhad et al. (2021) advocates for forward-looking monetary policies and countercyclical fiscal measures to stabilize aggregate demand. Additionally, Amiri et al. (2021) calls for sovereign wealth funds to mitigate oil price shocks, and Dargahi and Hadian (2022) emphasizes macroprudential oversight to address fiscal procyclicality. Redirecting oil revenues to non-traded sectors and adopting CPI inflation targeting, as suggested by Mashhadizadeh et al. (2022), further promote stability and diversification. Together, these strategies highlight the indispensable role of integrated fiscal and monetary policies in achieving Iran's economic stability and sustainable growth.

6.1.3 Asia

Fiscal policy is vital in supporting monetary policy, especially in resource-dependent economies across Asia and Central Asia. Beidas-Strom and Lorusso (2019) highlight the need for fiscal consolidation and structural reforms in oil-exporting nations like Russia and Saudi Arabia. While Russia benefits from inflation targeting and medium-term growth through fiscal measures, Saudi Arabia's vulnerabilities, such as pegged exchange rates and wage segmentation, require structural reforms alongside fiscal adjustments. The global energy transition further emphasizes the need for cohesive fiscal and structural strategies to address fiscal challenges. Similarly, Kozlovtceva et al. (2019) caution against inflation targeting during oil booms in Russia, advocating for countercyclical fiscal and macroprudential policies to mitigate credit cycles and "Dutch disease." This aligns with Khotulev and Styrin (2019), who stress coordinated policies to manage systemic risks from oil price surges and credit booms, particularly in economies with significant non-Ricardian consumers. Additionally, Andreyev et al. (2020) show that Russia's 2017 fiscal rule reduces output and exchange rate volatility, though private sector behavior moderates its impact.

In developing economies like India and Sri Lanka, Strehl (2019) illustrate how fiscal tools such as the Personal Expenditure Tax (PET) stabilize demand shocks but may increase inflation volatility under supply shocks, underscoring the need for policy alignment. In Southeast Asia, Kpodar et al. (2021) demonstrate that gradual public investment, revenue mobilization, and sovereign wealth funds enhance fiscal stability. Case studies from Malaysia and Vietnam reveal that targeted fiscal reforms strengthen resilience and mitigate exchange rate volatility and resource dependence. Collectively, these examples highlight the critical interplay between fiscal and monetary policies in addressing the unique challenges faced by resource-reliant economies across Asia and Central Asia.

Latin America

Fiscal policy is a cornerstone for stabilizing resource-dependent economies, as evidenced by studies across diverse regions. Guerra-Salas (2014) compares Mexico's volatile spend-as-you-go approach to Norway's stable

use of a sovereign wealth fund (SWF), highlighting the latter's effectiveness in reducing exchange rate and output fluctuations. This underscores the importance of institutional mechanisms in mitigating economic volatility. Similarly, Aguilar and Ramírez-Bulos (2018) uses a DSGE model to analyze Mexico's sensitivity to oil price shocks, revealing the vulnerability of fiscal deficits and public debt to commodity price fluctuations and risk premiums. These findings stress the need for fiscal-monetary coordination to stabilize commodity-reliant economies. Expanding on this, Van Der Ploeg (2019) advocates for Taylor rules and stabilization funds to mitigate Dutch disease, while Ghazouani (2020) shows that financially integrated economies like OECD countries better stabilize consumption and investment during oil shocks compared to less integrated economies like India and South Africa. Additionally, Aviomoh et al. (2022) identify financial frictions as key drivers of business cycles in oil-exporting nations, recommending tailored monetary policies and sterilized exchange rate interventions to curb inflation and enhance resilience.

Further insights by André et al. (2023) reveal that rising risk premiums during oil price volatility exacerbate fiscal deficits, depreciate exchange rates, and force central banks to raise interest rates, emphasizing the need for synchronized fiscal and monetary policies. On a global scale, Naisbitt et al. (2020) demonstrates that coordinated fiscal and monetary policies mitigated a third of potential GDP losses during the COVID-19 crisis in resource-rich markets like Brazil and Russia. Collectively, these studies underscore the transformative potential of cohesive fiscal and monetary strategies in addressing economic volatility, managing resource wealth, and fostering resilience in resource-dependent economies.

6.1.4 Different regions

Studies from resource-rich countries like Nigeria, Venezuela, Norway, Botswana, and Saudi Arabia highlight the challenges of managing resource wealth and the importance of coordinated policy frameworks. Van der Ploeg (2006) explore the "resource curse," where income volatility and real exchange rate fluctuations undermine monetary policy and crowd out non-resource sectors. They recommend strategies like the Hotelling and Hartwick rules to ensure sustainable growth. Similarly, Villarreal (2007) use a DSGE model calibrated with data from Nigeria and Venezuela to show that fixed tax rate regimes amplify inflation, while maintaining government spending as a share of GDP stabilizes inflation but limits fiscal flexibility. They advocate for savings funds and expenditure smoothing mechanisms to mitigate oil price shocks and enhance stability. In contrast, Ploeg (2011) highlight the success of strong institutions in Norway and Botswana, where strategic investments in human capital, infrastructure, and institutional reforms have transformed resource wealth into long-term stability. Together, these studies underscore the critical role of policy coordination, institutional strength, and strategic resource management in achieving sustainable development in resource-dependent economies.

6.2 Developed economies

Effective coordination between monetary and fiscal policies is essential for maintaining economic stability in resource-exporting developed economies as it is in developing economies. Wills (2014) emphasizes the importance of such coordination, alongside central bank credibility, to ensure resilience amid economic volatility. Similarly, Gaspar et al. (2016) highlights the integration of monetary, fiscal, and structural policies as critical for supporting global economic growth, particularly after crises like the 2009 financial downturn. These insights reveal that for commodity-exporting nations with limited fiscal capacity, combining fiscal adjustments with growth-oriented strategies is key to balancing economic demands and achieving debt sustainability.

The experiences of Canada and Japan illustrate this approach effectively. Both countries successfully integrated fiscal and monetary policies with structural reforms to drive GDP growth and control inflation, relying on credible fiscal policies and targeted public investments. Norway further exemplifies this coordination, as Bergholt et al. (2019) explains. By channeling oil revenues into a sovereign wealth fund and adhering to strict fiscal rules, Norway stabilizes its economy against oil price shocks, minimizes fluctuations, and complements monetary policy effectively. This disciplined approach not only mitigates external shocks but also

fosters long-term stability and sustainable growth, showcasing the transformative potential of coordinated fiscal and monetary strategies in developed resource-exporting economies.

7 Discussion and Results

7.1 Monetary policies discussion in developing economies.

Chapter 5 of Jongrim Ha and Yilmazkuday (2019) in Ha et al. (2019) highlights the crucial role of exchange rate regimes in shaping inflation dynamics, emphasizing that rigid regimes without credible inflation-targeting frameworks amplify inflation pass-through from monetary policy shocks, whereas flexible regimes with robust inflation targeting enhance stability against external shocks. This is particularly relevant for oil-exporting economies facing external volatility. Beyond inflation targeting, Salehi (2013) argues that weak financial markets and structural constraints make fixed exchange rates more effective for stabilizing revenue shocks in developing economies. Additionally, Chapter 6 of Jongrim Ha and Yilmazkuday (2019) shifts focus to low-income countries (LICs), showing that inflation reduction in these economies has been more dependent on stable external conditions than strong domestic policies. Fixed exchange rate regimes help anchor inflation to low-inflation currencies, while flexible regimes often fail to provide sufficient anti-inflation measures, underscoring the need for sustained reforms to establish internally driven inflation stability.

This section presents the results of the economies analyzed,identifying the optimal policies best suited for each.

The People's Democratic Republic of Algeria: Optimal monetary policies for oil-exporting economies such as Algeria depend on specific shocks and economic conditions. A flexible exchange rate regime combined with inflation targeting is generally preferred for managing oil price shocks and avoiding the Dutch disease. However, fixed exchange rates may be beneficial in certain contexts, particularly for stabilizing spending effects in high-oil-dependent economies. Core inflation targeting and central bank independence are also critical for strengthening interest rate transmission and ensuring economic stability.

Federal Republic of Nigeria: The Core Inflation Targeting Taylor Rule (CITR), combined with managed exchange rate flexibility and countercyclical fiscal coordination, is the most effective strategy for stabilizing inflation, output, and exchange rate volatility amid oil price shocks. This framework mitigates Dutch disease, external shocks, and structural constraints while minimizing welfare losses. Alternative policies, such as strict inflation, exchange rate, or money growth targeting, fall short in addressing both inflation and output volatility. Central bank independence and active monetary policy are crucial in preventing rent-seeking and ensuring price stability, particularly during commodity price fluctuations. A coordinated monetary-fiscal policy framework tailored to Nigeria's economy is essential for long-term stability and resilience.

Rest of African Economies: Monetary policy in African exporting economies must balance exchange rate regimes, inflation targeting, and fiscal interventions to mitigate external and domestic shocks. Fixed exchange rates help stabilize wages and prices in resource-dependent and agricultural economies, while flexible regimes gain effectiveness as markets mature. Selective inflation targeting enhances stability but requires fiscal support, such as revenue diversification and expenditure management, to counter commodity price volatility. The impact of monetary policy varies across financially included and excluded households, highlighting the need for targeted stabilization. Integrating interest rate feedback rules with exchange rate policies improves monetary transmission but faces challenges like market rigidity and information asymmetry. A coordinated approach, aligning monetary and fiscal policies with structural reforms, is essential for stability, inflation control, and economic resilience.

Iran: The optimal monetary policy for Iran should prioritize inflation targeting with a structured monetary rule that accounts for exchange rate dynamics and oil revenue shocks. Fiscal discipline and predictable

policy are key to controlling inflation and reducing exchange rate volatility. A modified Taylor rule, responding to inflation, output gaps, and exchange rate fluctuations, is effective, though exchange rate stabilization limits monetary independence. CPI Inflation Targeting (CIT) outperforms alternatives like Non-Traded Inflation Targeting (NTIT) and Real Exchange Rate Targeting (RERT) in stabilizing terms of trade and export productivity shocks. Financial market reforms, stricter regulations, and better bank-central bank coordination are crucial to minimizing risks. Given Iran's economic structure, a hybrid approach combining inflation targeting, active exchange rate management, and fiscal prudence ensures macroeconomic stability.

Russia: Optimal monetary policy should balance exchange rate flexibility, inflation targeting, and financial stability measures to navigate economic volatility. A hybrid approach integrating monetary and fiscal coordination ensures resilience against external shocks and financial fluctuations.

Latin America: The optimal monetary policy for Latin American commodity-exporting economies requires a flexible framework balancing inflation control, stability, and external shock mitigation. A Taylor-type rule incorporating inflation, output deviations, and oil revenues effectively stabilizes these economies, while targeting non-tradable inflation reduces exchange rate pass-through effects. Macroprudential policies, including countercyclical credit controls, help shield tradable sectors from excessive currency appreciation. Flexible exchange rates and countercyclical fiscal policies, like Chile's structural balance rule, enhance resilience, while FX interventions, as seen in Peru, stabilize financial markets. A coordinated mix of monetary, fiscal, and financial policies is crucial for stability and growth in resource-dependent economies.

7.2 Monetary policies discussion in developed economies.

Monetary policy in developed oil-exporting economies must be flexible, integrating inflation targeting, exchange rate management, and fiscal coordination to mitigate external shocks. Core inflation targeting with a flexible exchange rate stabilizes prices and output, while forward-looking interest rate management prevents inflationary pressures. Fixed exchange rate regimes and rigid inflation targets exacerbate downturns, making moderate exchange rate flexibility preferable. Traditional monetary tools alone are insufficient for managing exchange rate volatility, necessitating countercyclical fiscal policies and structural reforms. A coordinated approach balancing monetary and fiscal policies is essential to avoiding Dutch disease, mitigating spillovers from major economies such U.S. and China, and ensuring long-term macroeconomic stability.

7.3 Assumptions of the models

Developing economies In developing economies, Dynamic Stochastic General Equilibrium (DSGE) models often rely on key assumptions to capture monetary policy, price dynamics, and financial market frictions. Many studies, such as Benkhodja (2011, 2014), Allegret et al. (2018), Ssemwanga (2014), Ben-Naser et al. (2018), and Algozhina (2022a), assume rational expectations and nominal rigidities (e.g., wage and price stickiness à la Calvo) to model slow economic adjustments.

Other models, like Huseynov and Ahmadov (2014), Melesse (2016), Iklaga (2016), Oladunni (2020b), Queen Esther and Adams (2024), and Akosah et al. (2024), extend this by incorporating imperfect capital mobility, credit constraints, and fiscal overspending, reflecting institutional weaknesses. Some studies, including Dib (2008), Mohimont (2022), Kia (2006), Villarreal (2007), Hou (2010) further account for dual exchange rate impacts, financial market imperfections, and monetary-fiscal policy interactions, emphasizing complex policy transmission mechanisms.

Additionally, research like Coletti et al. (2021), Wills (2014), Taghizadeh-Hesary and Yoshino (2016), and Bergholt et al. (2023) highlights international trade dynamics, government oil revenue spending, and oil price pass-through effects, which are particularly relevant for commodity-exporting nations. Other models, such as Argűello et al. (2013), Dieppe et al. (2018), Esmailipour Masouleh et al. (2018), Kozlovtceva et al. (2020), Oladunni (2020a), and Jalali-Naini and Naderain (2016), focus on sectoral heterogeneity, financial frictions,

and limited risk-sharing, capturing structural rigidities specific to developing economies.

Finally, advanced frameworks, including Heidarpour et al. (2015), Doojav and Gantumur (2023), Del Negro and Schorfheide (2006), and Christiano et al. (2020), integrate macro-financial linkages, imperfect exchange rate pass-through, and monetary-fiscal interactions, providing a richer representation of economic fluctuations. These assumptions collectively shape the analytical power of DSGE and related models in capturing real-world dynamics in developing economies.

In developed economies, macroeconomic models adopt different assumptions to reflect specific economic dynamics. For example, Yamout (2022) assumes rational expectations, sector-specific productivity trends, and price stickiness in both tradeable and non-tradeable sectors. Similarly, Markov and Alstadheim et al. (2021) introduce rational expectations and regime-switching in policy parameters, capturing shifts in monetary policy frameworks. In addition, Ferrero and Seneca (2019) incorporates rational expectations, nominal rigidities, and monopolistic competition, modeling price-setting behaviors . Likewise, Bergholt (2014), builds a model with monopolistic competition, nominal wage and price rigidity across all sectors, highlighting frictions in price adjustments . These structural assumptions shape how models capture monetary policy transmission and economic fluctuations in developed economies.

7.4 Key Takeaways

In the context of monetary policy, it is evident that even within a single country, multiple studies may propose different optimal policy recommendations. This variation can be attributed to differences in the types of economic shocks considered, underlying assumptions, methods used to obtain parameter values (whether through calibration or estimation), and the specific sectors included in each study. Despite these differences, there is often a degree of consensus on certain policy approaches. For instance, in the case of Algeria, multiple studies converge on the recommendation of a flexible exchange rate combined with inflation targeting as an optimal monetary framework. Similar patterns of policy agreement can be observed for other economies, as discussed in Section 7.1.

Another key conclusion pertains to the coordination between monetary and fiscal policies, which is fundamental for macroeconomic stability, particularly in resource-dependent economies. Effective coordination requires strong institutions and independent central banks, ensuring that monetary policy remains effective even in the presence of fiscal fluctuations. Countercyclical fiscal measures, such as stabilization funds and rule-based spending, play a crucial role in mitigating economic volatility. Developed economies, exemplified by Norway, demonstrate the advantages of disciplined resource management through sovereign wealth funds, whereas developing economies must prioritize revenue diversification and strategic public investment. Avoiding procyclical fiscal policies is essential for maintaining monetary stability, and policy frameworks should be tailored to the unique structural and economic conditions of each country. Ultimately, well-aligned monetary and fiscal policies contribute to long-term stability, economic resilience, and sustainable growth.

DSGE models in developing economies incorporate assumptions like rational expectations, nominal rigidities, financial frictions, and fiscal constraints to capture monetary policy dynamics. Some extend to dual exchange rates, trade dynamics, and oil revenue effects, reflecting institutional weaknesses and policy complexities. In developed economies, models focus on rational expectations, sectoral productivity trends, and price rigidities, often incorporating regime-switching behavior and monopolistic competition to refine monetary policy analysis. According to Gomes et al. (2008)Bounded rational expectations in the New Keynesian Model improve stability, resolve indeterminacy, and generate richer economic dynamics, offering a more realistic alternative to fully rational expectations. which this is not the case in the studies we covered.

8 Conclusion

This literature review has examined the role of monetary policy in oil-exporting economies through the lens of General Equilibrium Models (GEMs). The analysis of 70 studies covering both developed and developing economies has highlighted the complexity of monetary policy transmission in resource-dependent countries. In developing economies, monetary policy is often constrained by external vulnerabilities, fiscal dominance, and institutional weaknesses, making inflation targeting, flexible exchange rates, and countercyclical fiscal policies the most commonly recommended approaches. However, their effectiveness varies depending on structural characteristics such as financial market development and policy credibility. In contrast, developed economies leverage macroprudential tools and well-coordinated fiscal-monetary strategies to mitigate the effects of oil price volatility, demonstrating a higher degree of policy resilience.

Despite the advancements in monetary policy modeling for oil-exporting economies, gaps remain in fully capturing the dynamic interactions between policy responses, commodity price fluctuations, and economic structures. While inflation targeting remains the dominant framework, alternative strategies such as price-level targeting and exchange rate stabilization offer potential benefits, depending on country-specific conditions. Future research should focus on integrating heterogeneous agent models, enhancing Bayesian estimation techniques, and incorporating real-time policy assessments to improve the practical applicability of monetary policy frameworks. By addressing these gaps, policymakers can design more adaptive and effective monetary strategies to enhance economic stability in resource-dependent nations.

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