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The impact of Monetary and fiscal policies on financial performance in Iraqi Oil Companies over the period 2018-2023

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Abstract

This study aims to investigate the impact of monetary and fiscal policies on financial performance in Iraqi oil companies over the period 2018-2023. The study used quantitative method, by quantifying how the policy interest rate, reserve requirement ratio, and broad money growth (ΔM2) affect profitability, liquidity, and leverage of Iraqi oil firms during 2018Q1–2023Q2, the results provide actionable evidence for both policymakers and corporate decision-makers. For the Central Bank of Iraq, the estimates help calibrate tightening or easing in a way that supports financial stability without imposing unintended stress on a sector critical to national revenues. For oil-firm managers, the findings offer an empirical basis for planning capital structure, liquidity buffers, and borrowing timing under different monetary conditions and oil-price environments. Finally, by explicitly testing whether transmission changed during the COVID-19 period, the study informs crisis-ready policy design by highlighting when monetary tools become more or less effective under heightened uncertainty. This study examined the status pre and post COVID-19, so that the period was continued after the crisis has gone. Nevertheless, since the present study is aimed at providing evidence of the firm-level effects of monetary policy instruments in isolation, fiscal policy is treated as an element of the macroeconomic environment rather than as a direct explanatory variable. For that, the study recommends to investigate the effects of fiscal policy, due to the insufficient statistical data that the researcher couldn't reach to do so.

Keywords: Monetary Policy, Fiscal Policy, Financial Performance, Iraqi Oil Industry, Panel Data.

1. Introduction

It is well established that monetary policy is a key channel by which macroeconomic authorities affect financial conditions, investment decisions and corporate sector outcomes. Both classical and modern macroeconomic theory highlight that the cost of capital, balance-sheet properties and ultimately profitability is shaped by changes in policy rates, liquidity conditions, and credit availability (Bernanke & Blinder,1992), Bernanke & Gertler (1995), Mishkin (1995)). Although the transmission of monetary policy has been widely studied in advanced economies, less research has focused on firm-level responses in resource-rich emerging markets, where sectoral concentration and external price shocks may change or mute standard transmission channels.

The linkage of monetary policy to corporate performance takes particular significance in economies heavily reliant on oil. Generally, oil and gas companies are capital-intensive marked by high leverage, total fixed investment, and vulnerability to large swings in world commodity prices (Kilian & Park, 2009; Filis, Degiannakis, & Floros, 2011). Under such circumstances, shifts in domestic monetary conditions and movements in global oil prices may interact, generating dynamics that are unlikely to arise in more diversified economies. In a simple example, although higher interest rates tend to push up the cost of borrowing and thus suppress investment via the interest-rate channel (Bernanke & Blinder, 1992), oil-sector revenues tied to international prices could cushion firms from domestic tightening. On the other hand, liquidity expansions that raise asset prices and relax credit frictions can amplify leverage cycles in capital-intensive sectors (Bernanke & Gertler, 1995; Gertler & Karadi, 2015).

Existing empirical literature demonstrates considerable effects of monetary policy shocks on corporate financing or investment decisions. For example, Oliner and Rudebusch (1996) show that monetary tightening restricts access to external finance and reduces capital expenditure in U.S. firms. For instance, Gertler and Karadi (2015) use an estimated model with dispersed information and point to financial intermediation channels driving the real effects of monetary policy surprises through

credit spreads. Previous studies have shown that oil price shocks and their interactions with monetary policy affect equity returns and macroeconomic performance at the sectoral level through discount-rate and risk-premium channels (Kilian & Park, 2009). In addition, whether commodity-dependent economies are promoting amplified or asymmetric transmission effects is subject to dynamic correlations between oil markets and financial variables (Filis et al., 2011).

Despite these innovations, firm-level evidence remains scant in oil-rich emerging economies, especially in Middle Eastern settings where institutional frameworks, banking sector, and market concentration diverge sharply from advanced economies. Iraq offers a distinctive case. The economy of Iraq, one of the world's largest oil producers, is highly dependent on hydrocarbon production; the oil sector is the main source of export revenues and a considerable proportion of GDP. Iraq experienced high volatility in its monetary environment for the years 2018Q1–2023Q2 that include policy-rate changes, reserve requirements, and significant liquidity expansion during the COVID-19 pandemic. The pandemic itself was an unprecedented macroeconomic shock, transforming the global oil demand and domestic financial conditions.

The COVID-19 crisis provides a natural setting to assess whether monetary transmission mechanisms remain stable under conditions of extreme uncertainty. Studies suggest that transmission channels may weaken, strengthen, or even reverse during crisis periods depending on financial frictions and risk perceptions (Gertler & Karadi, 2015). In oil-dependent economies, the simultaneous collapse in global oil prices and domestic liquidity interventions may have generated nonlinear effects on firm performance.

Thus, the current study explores the effect of some essential monetary policy tools, namely, the policy interest rate, reserve requirement ratio and growth of the broad money supply on the financial performance of oil companies in Iraq for the period 2018Q1–2023Q2. This study employs a balanced quarterly panel and a firm fixed-effects framework augmented by time fixed effects in order to identify the

intertemporal variation in monetary conditions and to correlate it with profitability, liquidity, and leverage measures at the firm level. Focusing on microeconomic rather than aggregate measures, the analysis offers evidence at a firm level on how macroeconomic policy translates into corporate balance sheets in a strategically important sector.

This study contributes to the literature in three important ways. First, it expands the empirical analysis of monetary transmission to a resource-rich developing economy-a topic under explored in highly-ranked journal. Second, it links macroeconomic policy variables to metrics commonly used in corporate finance, connecting the dots between monetary economics and financial analysis at the firm level. Third, it not only tests the commonality of transmission mechanisms over a period of global crisis but provides guidance on the state-dependence of monetary policy transmission.

1.1 Background:

The structure of the Iraqi economy remains heavily reliant on the oil sector, the main source of export revenue and the dominant player in the economy. For economies reliant on natural resources, growth remains inextricably connected to the vagaries of commodity prices and shifting external demand conditions. For many years, oil price volatility was linked to major macroeconomic and financial adjustments that arose from investment cycles, fiscal balances, and monetary reactions (Hamilton, 1983; Kilian, 2009). Thus, domestic monetary policy in these environments functions under the constraint of international energy markets.

Iraq's monetary landscape experienced notable changes from 2018Q1–2023Q2, driven by both external shocks and domestic policy adjustments. Oil price conditions shifted markedly during the COVID-19 pandemic; starting in early 2020, global demand fell sharply, pushing oil prices down. At the same time, increased uncertainty and a tightening in global financial market liquidity conditions. Due to worldwide economic disruption, developed and emerging economies maintained accommodating monetary policies through the respective interest-rate reductions and liquidity

injections in response to minimise collapses (Gertler & Karadi, 2015). Especially in emerging market economies, the balance had to be struck between stabilizing the domestic financial system and providing a response to external commodity shocks.

With a view of maintaining liquidity and financial stability in this turbulent period, the Central Bank of Iraq (CBI) adopted a series of measures. The domestic economy was partly buffered through policy-rate adjustments and liquidity support as well as on balance sheet liquidity provisions at the policy-setting horizon. Reductions in policy rates reduce the cost of borrowing, incentivize credit growth, and ease the condition of corporate balance sheets via the interest-rate and credit channels (Bernanke & Blinder, 1992; Bernanke & Gertler, 1995), theoretical frameworks where the motion in reduced policy rates take a significant aspect. At the same time, money supply increases may help asset values, and near-term liquidity availability for certain industries that are capital-heavy and require ongoing financing.

Nonetheless, and this is a domain where oil-dominant economies are no exception, these channels are not automatic. Oil companies usually work with long-term production contracts, capital-intensive extraction processes, and international commodity price exposure. Oil price shocks in their own right impact on financial markets and firm-level outcomes as documented in the literature (Kilian & Park, 2009; Filis, Degiannakis, & Floros, 2011). As a result, domestic monetary policy has the potential to exacerbate or mitigate the effects of external oil shocks on firm performance.

Additionally, capital-heavy industries like oil and gas tend to be highly leveraged to fund exploration, production and infrastructure. This financial reliance on debt sectors makes it more responsive to interest-rate movements and credit availability. The balance-sheet channel of monetary transmission highlights the fact that changes in interest rates and liquidity conditions induced by policy affect firms net worth, collateral values, and ability to borrow (Bernanke & Gertler, 1995). In developing economies where corporate financing is heavily reliant on the banking system, through

the impact on lending and the supply of liquidity, reserve requirements adjustments and liquidity measures could also affect corporate sector finances.

The coronavirus period makes it more complicated. The strength and working of transmission mechanisms are known to change amid crisis episodes. Given extreme uncertainty, monetary easing can have nonlinear consequences, stabilizing liquidity, but unable to restore profitability in full, as demand conditions would be extremely depressed (Gertler & Karadi, 2015).

In general, during the period 2018Q1–2023Q2 and against this macroeconomic background, Iraqi oil firms represent an ideal laboratory in which to assess whether or not classical monetary transmission channels work in a resource-rich yet emerging economy during transient periods of normalcy and crisis. This creates a natural experiment in which one can empirically disentangle the contribution of policy-rate changes, liquidity injection, global oil price fluctuations and firm-specific balance sheet details in the transmission of monetary policy.

1.2 Problem Statement:

While the theoretical basis for monetary policy transmission is well established, the relative strength and stability of these mechanisms continue to be context-dependent. According to the classical interest-rate channel, the policy rate affects the costs of borrowing and hence the level and profitability of investment by corporations (Bernanke & Blinder, 1992; Mishkin, 1995) The credit and balance-sheet channels underscore the notion that monetary policy tightening may reduce the availability of bank credit and magnify the negative impact of monetary tightening on firms' net worth, thus increasing financial stress (Bernanke & Gertler, 1995). Nevertheless, firm-level research in oil-dependent developing economies on how these channels function is lacking.

Oil firms hold a unique structural position in resource-dominant economies like Iraq. At one level, they are leverage-intensive, capital-intensive entities, which would lead them to be sensitive to changes in interest rates and credit conditions. Conversely,

revenues are tied to world oil prices, which may insulate them from domestic monetary swings. Previous empirical studies confirm that oil price shocks have a profound impact on financial markets and macroeconomic performance (Kilian & Park, 2009; Filis, Degiannakis, & Floros, 2011), but the limited research on the impact of these external shocks and domestic monetary policy has been based on firm-level investigations.

Seriously, the COVID-19 pandemic created a unique macroeconomic shock and might have changed the intensity and the sign of monetary transmission. The origins of crisis environments are often linked to increasing uncertainty, limited accessibility of credit markets and non-linear effects of implemented policies (Gertler & Karadi, 2015). In these environments, standard monetary easing may not restore profitability proportionately even if it stabilizes liquidity, or tightening may have disproportionately contractionary effects. The empirical possibility of state-dependent monetary transmission for Iraqi oil firms in part of the pandemic period is an unknown.

The existing literature often uses aggregate macroeconomic data, stock indices, or cross-country panels to measure the impact of monetary policy. These are undoubtedly illustrative approaches, but may mask divergence at the firm level, and neglect the rebalancing that is likely to happen within important sectors strategically. Related to this literature is the lack of firm-level panel evidence from Iraq, which can be considered as an important literature gap. Absent of disaggregated analysis, sector policymakers are deprived of empirical reference points for how monetary instruments interact with firm solvency in this critical class of the conglomerate economy.

Hence, the central issue dealt with in this work is the absence of firm-level empirical evidence on the impact of monetary policy on Iraqi oil companies' financial performance during 2018Q1–2023Q2 period. Thus, it is still unknown whether changes to the policy interest rate, reserve requirement ratio, and money supply growth have significant effects on profitability, liquidity, and leverage in this segment, and if those pass-throughs have shifted during the COVID-19 shock. Next, the diagram shows the research model which explain the relationship between the variables:

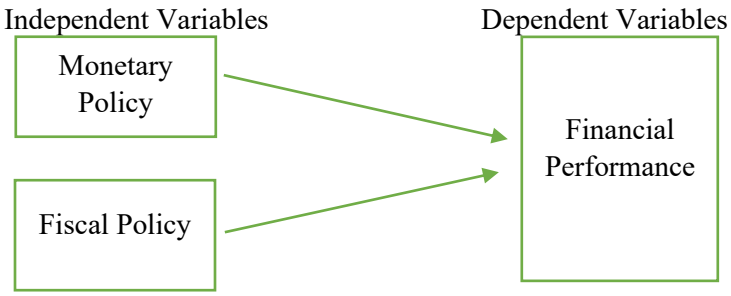

Figure (1): Research Model

1.3 Objectives & Research Questions:

Building upon the problem articulated above, the primary objective of this study is to empirically examine the extent to which monetary policy instruments influence the financial performance of Iraqi oil firms during the period 2018Q1–2023Q2. The analysis is grounded in the theoretical framework of monetary transmission, particularly the interest-rate, credit, and balance-sheet channels (Bernanke & Blinder, 1992; Bernanke & Gertler, 1995; Mishkin, 1995), and seeks to determine whether these mechanisms operate effectively within a resource-dependent emerging economy.

More specifically, the study aims to achieve the following objectives:

1. Evaluating the impact of policy interest rate changes on firm-level profitability.
2. Assessing the effect of reserve requirement adjustments on corporate liquidity and leverage.
3. Analyzing the role of money supply growth in shaping short-term financial conditions.
4. Examining whether the COVID-19 pandemic altered the strength or direction of monetary transmission mechanisms.

Based on these objectives, the study addresses the following research questions:

1. Does the policy interest rate exert a statistically significant influence on the profitability of Iraqi oil firms?
2. Do reserve requirement changes materially affect corporate liquidity and leverage?

3. Is money supply growth associated with improved firm-level financial performance?
4. Did the COVID-19 shock modify the transmission of monetary policy to oil-sector firms?

1.4 Significance of the Study:

We add to the literature on monetary policy transmission with firm-level evidence from an emerging market economy heavily reliant on natural resources. Theories surrounding monetary transmission are well established (Bernanke & Blinder, 1992; Bernanke & Gertler, 1995; Mishkin, 1995), though empirical testing has largely focused on either advanced economies or cross-country macro-level evidence. Evidence on firm-level panels in oil-dominated economies is, so far, more scarce. While the literature has made strides in examining large geographic areas (e.g., states with oil), there is a geographic and sectoral gap addressed in this research focusing on Iraqi oil firms.

This study provides a rare firm-level examination of monetary transmission in an oil-exporting emerging economy such as Iraq, characterized by high oil dependence, partial state ownership, and macroeconomic volatility is very high in nature which makes the study practical from a theoretical perspective being a testing ground for classical interest-rate, credit and balance-sheet channels. The oil firms are different than the firms in diversified economies because their capital intensity, global commodity cycles exposure, and strategic importance to national income. Where, however, monetary transmission does not work as per the existing models, existing models would need contextual refinements. As a result, this paper provides empirical support for, or refines existing transmission theories in an emerging-market context.

Using a balanced firm-level panel with fixed-effects and dynamic specifications, consistent with the methodologically rigorous aggregate time-series approaches, increases the strength of causal interpretation. The use of unobserved firm-specific fixed effects reduces omitted-variable bias, and robustness checks alleviate concerns of simultaneity.

The implications from the findings are particularly direct from the policy perspective for the Central Bank of Iraq. If anything, monetary authorities need to fine-tune their policy tools (policy rates, reserve requirements and expanding liquidity) without disrupting key industries that are a vital part of their strategies. Overtly aggressive tightening in central bank monetary policy may keep sector profitability and indirectly fiscal stability if oil firms show sensitivity to monetary tightening. On the other hand, if liquidity easing mainly relieves short-term solvency pressures without increasing profitability, policymakers will have to weigh inflation risks against small real-sector benefits.

Knowing the scale and timing of the monetary transmission is also essential for corporate decision-makers in the oil sector. The results from this study provide evidence that financial managers can use to predict how future changes in the business environment will influence the cost of capital, liquidity conditions and the risk of leverage. Cutting-edge proactive balance-sheet expense reductions, hedging and optimizing capital structure can help to stave-off bad macro-financial shocks.

Lastly, the study has wider relevance to other oil-exporting and resource-dependent economies. So many emerging markets share common structural features, such as concentrated export structures, sovereign-controlled enterprises, and monetary regimes in transition. Iraq can then serve as a useful comparative case of how monetary policy handles critical sectors under stress conditions of external shocks and crisis.

2. Literature Review

2.1 Theoretical Foundations of Monetary Policy:

The monetary policy transmission mechanism is commonly described through the interest-rate channel, the credit channel, and the balance-sheet channel (Mishkin, 1995; Bernanke & Gertler, 1995; Gertler & Karadi, 2015). Interest-rate channel (This is classic, the most widely known mechanism) As per Bernanke and Blinder (1992), the central bank's policy rate changes lead to movement in short-term market interest rates, which subsequently affects firms and household borrowing costs. Higher policy

rates raise external-financing costs, reduce investment, and consumption, ultimately shrinking corporate profit. According to Mishkin (1995), this channel works through both direct cost-of-capital effects and indirect demand-side responses.

More specifically, the credit channel builds on an interest-rate mechanism but sharpens this mechanism by introducing frictions in financial markets. In a seminal paper exploring these dynamics, Bernanke and Gertler (1995) advance the view that monetary policy can influence not only the price of credit but also the supply. This channel divides into two: the bank-lending channel and the balance-sheet channel. According to the bank-lending channel, a tighter monetary policy, and especially one based on a reserve requirement or a liquidity trap, limits the banks' ability to provide credit. Such firms could be subject to constrained access to capital — regardless of the level of interest rates — if they are dependent on bank financing.

The field of balance-sheet sub-channel stresses the transmission of monetary policy through firms net worth and collateral values. The external finance premium is affected, through changes in perceived borrower risk, by capital price and interest rates (Bernanke & Gertler, 1995). An opposite policy may harm firms balance sheets, increase borrowing spreads, and with this the real effects of monetary tightening. By contrast, an expansionary policy can support valuations by increasing the extent to which assets are valued, and loosening their financing constraints.

Further work builds on these foundations by including financial frictions as well as expectations. More recently, Gertler and Karadi (2015) show how monetary policy shocks can spread through credit spreads and risk premia, magnifying their macroeconomic effects. The impact of their findings on financial intermediation for transmitting impulses of policy (particularly in a stressed environment). The channeling of credit through standard transmission mechanisms could weaken or become nonlinear in crisis environments, as uncertainty and a hoarding of liquidity causes standard credit flows to breakdown.

These theoretical channels may function differently within oil-dependent economies.

Oil companies earn revenue streams largely priced internationally, giving them perhaps a modicum of protection against local monetary movements. Their capital-dependent nature and leverage exposure points to an ongoing sensitivity to borrowing costs and liquidity conditions. Research further reveals that the influence of oil price shocks on financial markets and firms is conditioned by monetary policy (Kilian & Park, 2009; Filis, Degiannakis, & Floros, 2011). As a result, the transmission of domestic monetary policy is ultimately governed by macro-financial linkages—and perhaps the feature that ultimately holds together various micro-foundations, putting a clear structural spin on the shaping of monetary transmission mechanisms, is the property of sectoral interlinkages.

Third, institutional structure further conditions transmission efficacy for emerging markets. Policy instruments impact firms differently depending on establishment of banking-sector depth, capital-market development, and exchange-rate regimes. Where financial systems are less bank-based, and firms depend more on domestic banking channels reserve requirements and liquidity operations may have larger firm-level impacts.

2.2 Fiscal Policy Theory:

While the thrust of this study is monetary policy transmission, fiscal policy provides an important macroeconomic background over which monetary effects operate. The co-ordination role of fiscal policy with monetary authority would be possible to affect the aggregate demand, liquidity conditions and it would play an important role in macroeconomic stability. Thus, while fiscal variables are not directly modeled in the empirical framework, highlighting their theoretical importance contributes to analytical stringency.

Fiscal policy is the use of government spending and taxation to influence the economic activity of a country or region. Traditional Keynesian theory holds that expansionary fiscal policy boosts aggregate demand in an economy downturn, while contractionary fiscal measures can ease inflationary pressure. The impact of fiscal straits on output

and company can be transmitted via public expenditure multipliers and disposable profit effects (Hamilton, 1983)

In other words, fiscal policy in oil-dependent economies is structurally different. That is because government revenues are based too much on oil exports, generating procyclical expenditure paths dependent on commodity prices. There is considerable empirical evidence that macroeconomic stability and growth paths in resource-exporting countries react to oil revenue fluctuations (Hamilton, 1983; Kilian & Park, 2009). Revenue volatility of this sort may affect corporate behaviour indirectly via public investment, payment flows and domestic demand conditions.

Additionally, this can either strengthen or mitigate the macroeconomic effects of fiscal stance and monetary policy interactions. However, if monetary policy is also accommodative when fiscal expansion is conducted, aggregate demand could be further boosted, lifting profitability on the firm level. On the other hand, monetary tightening and fiscal contraction tend to cumulatively reinforce contractionary pressures. This is particularly important in emerging market economies, where coordination mechanisms between fiscal and monetary policy authorities, are either nascent or undergoing changes.

Government tax policies impact business performance and profitability. Increased taxation on petroleum products or oil and gas companies restrict output and may lead to rising prices; the opposite is true for lower taxes (Investopedia, 2024).

While the various theoretical channels for the impact of fiscal policy on inflation and inflation expectations present a range of the possible interactions between macroeconomic policies, differences in underlying institutional frameworks may also affect the relevance of a particular policy tool. These include the strength of the monetary policy frameworks and the soundness of fiscal policy, often anchored by the presence of fiscal responsibility laws or medium-term frameworks (Arizala et. al. 2025, 8).

Nevertheless, since the present study is aimed at providing evidence of the firm-level effects of monetary policy instruments in isolation, fiscal policy is treated as an element of the macroeconomic environment rather than as a direct explanatory variable.

2.3 Financial Performance of Oil Firms:

Financial performance is their focus area of measuring as an indicator of how the monetary policy transmission works for the corporates. The capital-intensive nature of industries like oil and gas warrants performance indicators that provide insights on profitability, liquidity, and leverage, as these three dimensions relate both to operational efficiency as well as to financial resilience.

Profitability:

Profitability is the ability of firm to earn a profit based on its assets or equity capital. Return on Assets (ROA) and Return on Equity (ROE) are the most frequently used measures. While ROA shows the operational efficiency since it signifies how well management effectively turns total assets into profits, ROE reflects the return generated for the shareholders. These ratios are often applied in energy-sector studies because of the comparability among firms as well as their responsiveness to financing conditions (Filis, Degiannakis, & Floros, 2011).

Profitability is hypothesized to directly respond to borrowing costs in the context of monetary policy transmission. The interest-rate channel suggests that higher policy rates raise the cost of debt servicing and therefore squeeze net income and lower ROA and ROE (Bernanke & Blinder, 1992; Mishkin, 1995). This means that oil firms may actually be more susceptible to such changes, as they are dependent upon long term capital investments that necessarily rely on exploration and infrastructure.

Liquidity:

Liquidity indicators are measures of a firm's capacity to cover its short-term commitments without having to resort to further external financing. Liquidity reflects a firm's ability to meet short-term obligations without resorting to additional external

financing. In this study, liquidity is measured using the Current Ratio (current assets divided by current liabilities), as it provides a standardized and consistently available quarterly measure across firms.

This is especially the case when one evaluates the balance-sheet channel of monetary transmission, where liquidity is central. Furthermore, expansionary monetary policy may improve liquidity conditions via higher bank lending and lower financing costs, which can help improve short-term solvency. On the other hand, a more onerous requirement for reserves could limit credit flows, impairing strength of firms' liquidity positions (Bernanke & Gertler, 1995). For oil companies, however, liquidity management is of utmost importance as alterations in international oil prices may make their revenues volatile (Kilian & Park, 2009).

Based on Almakura et. al (2024), managers of oil and gas firms should adopt effective liquidity management policies that guarantee an optimal level of liquidity that improves its profitability and enables them operate with a reasonable margin of safety.

Leverage and Solvency:

Financial risk and capital structure stability are captured by Leverage Indicators. The tightened monetary policy can affect leverage dynamics through direct and indirect channels. Interest coverage ratios could weaken due to rising debt servicing costs caused by higher interest rates. At the same time, limited availability of credit could stifle the chances of refinancing. According to the balance-sheet channel, firms with lower net worth are subject to larger external finance premia in contractionary states (Bernanke & Gertler (1995)).

Oil Sector Specific Considerations:

Oil firms have structural features that tend to set them apart from firms in diversified industries. These investments are very capital-intensive with long-time horizons and located in sectors that are highly sensitive to international commodity global price fluctuations of commodities (Hamilton, 1983). Domestic macroeconomic conditions

often matter less than international oil price movements for the profitability of domestic producers. Nonetheless, domestic monetary conditions still dictate financing structures, debt servicing obligations and liquidity management.

Using empirical research, Kilian & Park (2009), and Filis et al. (2011) provide evidence indicating that oil price shocks are important determinants of firm valuation and directly impact stock performance. However, firm-level accounting measures (e.g. ROA, liquidity ratios and leverage) have received less scrutiny in oil-exporting emerging markets.

Implications for Analysis for the Current Study

Considering these arguments, the current study defines financial performance in terms of three dimensions:

Profitability: assessed through ROA&ROE

Liquidity: current ratio measurement

Leverage – assessed using the Debt-to-Equity (D/E) ratio.

2.4 Empirical Evidence: Global & MENA:

Monetary policy transmission has been a popular topic of empirical research focusing on how different central bank instruments influence macroeconomic aggregates and financial markets. By contrast, firm-level evidence across particularly in resource-rich economies, is still relatively scarce. This chapter draws together findings from across the globe and region, and where possible and relevant to the current research.

Global Evidence:

Empirical research in advanced economies provides extensive evidence that monetary tightenings lower corporate investment and profitability as well as external financing. Evidence from Oliner and Rudebusch (1996) shows that a rise in policy rates impairs the access of firms to external finance, consistent with the credit channel of transmission. In particular, Bernanke and Blinder (1992) show that changes in the

policy-rate affect banks' lending decisions, which then affect how corporations adjust their borrowing.

Recent studies include financial frictions and heterogeneity in firm responses. Finally, Gertler and Karadi (2015) demonstrate that the impact of monetary policy shocks on the real sector is amplified when monetary shocks affect credit spreads and risk premia. What they found is that financial intermediaries are essential to transmitting policy shifts. It also supports the balance-sheet channel hypothesis that firms with weaker balance sheets are affected more during tightening cycles (Bernanke & Gertler, 1995).

The relationship between oil prices and monetary policy has received considerable attention in energy markets. It shows significant impacts of oil price shocks on equity markets via discount-rate and risk premium channels (Kilian and Park (2009)). Dynamic correlations between oil prices and stock markets in oil-importing and oil-exporting economies are found suggesting interaction between commodity price volatility and the financial conditions (Filis, Degiannakis, and Floros, 2011).

Evidence from Emerging Markets:

Structural features of many emerging markets, including banking-sector dominance, absent or shallow capital markets, and institutional constraints, lead to different monetary transmission mechanisms than in advanced economies. Ibrahim & Alhassan (2020). Effects of monetary policy rate on financial performance of firms: evidence from Ghana, 9(3), 243--258. The results of their study based on firms listed on Ghana Export Investment and Trade Promotion Council. It reinforces the mechanism of interest-rate channel, and its negative impact on financial performance metrics, even in case of developing economies. Again, Mbadeshuli and Mushunje (2017) state that monetary policy directly affects the results of manufacturing firms in Zimbabwe.

Nevertheless, oil-exporting emerging economies are still having trouble with sector-specific analyses. Countries reliant on oil usually have procyclical fiscal structures and exchange-rate regimes that may moderate or increase the monetary transmission. On the other hand, the behaviour of partially state-owned enterprises regarding domestic

policy changes may differ from that of privately owned firms.

Evidence in the MENA Region:

Despite this, the research in our region MENA for the most part ended up being concocted the stock exchange response to the oil price alterations right at home instead to firm level accounting execution. Arouri, Lahiani, and Nguyen (2011) document large spillovers from international oil prices to GCC stock markets, confirming that commodity cycles play an important role in financial outcomes. Previous studies like Nazlioglu, Gormus, and Soytas (2018) indicate that transmission mechanism of the relation between oil prices and the monetary policy in emerging markets has changed over time to time and that there are structural breaks.

However, few, if any, empirically studies linking monetary policy instruments to firm level profitability, liquidity and leverage in Iraq. Prior work is either macroeconomic aggregate focused or cross-country panel based, which obscures country level institutional processes.

Implications for the Present Study:

Based on the literature reviewed, three fundamental points are established:

Interest-rate and credit channels link monetary policy to corporate performance.

The volatile nature of oil prices affects financial conditions which can serve as a dampener on policy channels.

There is little firm-level evidence from oil-exporting emerging economies.

2.5 Research Gaps:

The prior synthesis of theory and literature revealed many critical gaps that support the present study. To begin with, although the interest-rate, credit, and balance-sheet channels are well known in the macroeconomic theory (Bernanke & Blinder, 1992), Bernanke & Gertler (1995), Mishkin (1995)), most of the empirical validations rely on aggregated macro-economic or financial market data. These approaches allow broad

insights into aggregate economic behaviors but miss out on firm-level heterogeneity. Accounting-based performance measures (descriptive parentheses are omitted; e.g., ROA, liquidity ratios, and leverage indicators) have still been neglected in a large part in monetary transmission research (especially in emerging and post-socialist markets).

Second, the literature on oil markets has primarily focused either on effects of oil price shocks on the stock market returns or on real economic aggregates (Kilian & Park, 2009; Filis et al., 2011). While these studies show that commodity price volatility has an impact on financial market, they do not directly test the impact of domestic monetary policy instruments on oil firms' financial statements. We know relatively little about the interaction of policy rates, reserve requirements and firm-level financial behaviour in oil-exporting economies.

Third, empirical research in the MENA region is more dedicated to stock market spillovers and macroeconomic linkages (Arouri et al., 2011; Nazlioglu et al., 2018). But there is limited country-specific, firm-level panel evidence—especially for Iraq. Iraq provides a peculiar institutional environment of high oil reliance, partly state-owned enterprises and an evolving monetarist system. One main contribution of this work is that we fill an important gap within the literature: we rely on granular empirical analysis from this setting, which has absented from the literature.

Fourth, the COVID-19 pandemic was an exogenous macroeconomic shock that could have changed the monetary transmission process. Although recent research points to state-dependence of monetary policy during crisis times (Gertler & Karadi, 2015), evidence regarding these nonlinearities among oil-dependent emerging economies is scarce. The effects of policy tightening or easing during the pandemic will be stronger or weaker than those observed prior to it.

Fifth, the previous research also has methodological limitations. A large body of research is based on time-series models or cross-country regressions that unavoidably suffer from omitted-variable bias, as it does not control for firm-specific unobserved heterogeneity. Our results exploit within-firm temporal variation using firm-level panel

data with fixed-effects estimation, which allows a more challenging identification strategy.

3. Methodology

3.1 Research Design:

The research has a quantitatively explanatory research design that seeks to find the causal relationship between monetary policy tools and firm-level financial performance. The empirical strategy is based on panel-data econometrics, which exploits the cross-sectional and temporal variation simultaneously.

Source: Quarterly observations for 2018Q1–2023Q2. There are three analytical reasons why this period is important. First, it captures pre-pandemic macroeconomic conditions. Second, it covers the COVID-19 shock period, when monetary authorities adopted exceptional liquidity measures. Third, it includes the subsequent adjustment phase, during which monetary conditions gradually normalized.

Our methodology benefits from the use of firm-level panel data. More critically, it allows controlling for unobserved, firm-specific, time invariant factors, such as managerial quality, governance structure, operational efficiency and strategic positioning. These hidden traits can introduce bias in pooled regression estimates if not included. This concern is alleviated with fixed-effects estimation, which controls for firm fixed-intercepts allowing for within-firm variation—to the degree that it is explained by monetary policy instrument changes.

This study intends to establish the functioning of three traditional channels of monetary transmission, which are:

- Interest-rate channel: measured by variations in policy rate of the Central Bank.
- Credit (bank-lending) channel: proxied by changes in reserve requirement ratios, which affect banking-sector lending capacity.
- Balance-sheet (liquidity) channel: proxied by broad money supply growth (ΔM2).

Accounting-based financial performance indicators are used as the dependent variables and are grouped into three dimensions: profitability (ROA, ROE), liquidity (current ratio), and leverage (debt-to-equity ratio).

The research design includes several other features to increase internal validity:

- Macroeconomic control variables (inflation, oil prices) to capture common shocks
- Quarterly frequency data to account for short-run dynamics.
- Structural breaks test via a COVID-19 interaction term.
- Dynamic panel specifications for robustness testing.

3.2 Population & Sample:

The study population includes all oil and gas companies operating in Iraq that publish publicly available financial statements. Since the goal is to analyze firm-level reactions to monetary policy tools, time-consistent accounting information per firm is needed. Therefore, to be methodologically sound, a balanced-panel sampling criterion was applied.

To be part of the sample, firms had to meet the following criteria:

1. Quarterly financial statements are available continuously for 2018Q1 through 2023Q2.
2. Operational classification in oil and gas.
3. Full data about profitability, liquidity and leverage indicators.
4. Uniformity of reporting standards throughout the period sampled.

After applying these criteria, the final sample consists of five Iraqi oil-sector firms, yielding 110 firm-quarter observations (5 firms × 22 quarters) over 2018Q1–2023Q2. Each firm contributes 22 consecutive quarterly observations, producing a balanced panel.

The adoption of a relatively modest cross-sectional dimension (N = 5) and moderate time dimension (T = 22) is suitable for fixed effects estimation. Though not many

firms are operating in this relative market, this is indicative of the structural concentration of the oil sector in Iraq as only few larger firms' activity dominates operations. The balanced panel increases internal validity from an econometric perspective and permits valid within-firm inference over time.

The takeaway: the sample consists mostly of state-controlled or quasi-strategic national oil companies. Although, it may restrict external generalizability to privately owned or smaller firms, this reinforces the result relevance to macroeconomic stability, given the importance of such facilities in the economy of Iraq.

This period has three different macroeconomic phases of interest:

- Pre-COVID phase (2018Q1–2019Q4): characterized by relatively stable monetary conditions.
- COVID shock phase (2020Q1–2021Q4): characterized by exceptional liquidity measures and sharp oil-price fluctuations.
- Post-COVID adjustment phase (2022Q1–2023Q2): representing gradual normalization of policy tools.

3.3 Data Sources:

In order to be transparent, reproducible and high-impact journal compliant, this study uses only official and verifiable data sources. It combines macro-level monetary policy indicators with financial statement data at the firm-level.

3.3.1 Monetary Policy Data:

Data on monetary policy variables comes from the official publications of the Central Bank of Iraq (CBI) and cross-validated whenever possible with international databases. Monthly observations are combined into quarterly series whenever possible but quarterly series are built from monthly observations whenever necessary.

The monetary policy instruments include:

- Policy Interest Rate (%)
- The reference policy/discount rate declared by the Central Bank of Iraq These

variable measures the monetary transmission through the interest-rate channel.

- Reserve Requirement Ratio (%)
- The minimum fraction of deposits that must be held as reserves by law This is a proxy banking-lending (credit) channel variable.
- Broad Money Supply (M2)

ΔM2: Monthly M2 data are then used for quarterly growth rates, a measure of liquidity expansion and the balance-sheet channel.

Since the data employed for firm financial reporting is in quarterly frequency, all the macroeconomic variables have been expressed in quarterly frequency.

3.3.2 Firm Financial Data:

Data on firm-level financial variables are taken from the following sources:

- Quarterly and annual reports of oil firms in our samples
- Iraq Stock Exchange (ISX) disclosures
- Official corporate financial statements

All accounting numbers are translated into common units and standardized through standard financial ratios, if necessary, such that they are comparable across firms.

Table (1): Summary of Data Sources and Variable Construction

Category	Variable	Definition	Source	Frequency
Monetary Policy	Policy Interest Rate (IR)	Official benchmark policy rate (%)	Central Bank of Iraq	Quarterly
Monetary Policy	Reserve Requirement Ratio (RR)	Required reserve percentage of bank deposits	Central Bank of Iraq	Quarterly
Monetary Policy	Money Supply Growth (ΔM2)	Quarterly percentage change in broad money (M2)	Central Bank of Iraq	Quarterly
Controls	Inflation (CPI)	Quarterly percentage change in Consumer Price Index	Central Bank of Iraq	Quarterly
Controls	Oil Price	Brent crude average (USD per barrel)	International databases	Quarterly
Firm-Level	ROA	Net Income / Total Assets	Firm financial reports	Quarterly
Firm-Level	ROE	Net Income / Shareholders' Equity	Firm financial reports	Quarterly
Firm-Level	Current Ratio	Current Assets / Current Liabilities	Firm financial reports	Quarterly
Firm-Level	Debt-to-Equity Ratio	Total Debt / Shareholders' Equity	Firm financial reports	Quarterly
Firm-Level	Firm Size	Natural logarithm of Total Assets	Firm financial reports	Quarterly

3.4 Variables and Measurement:

This study examines the impact of monetary policy instruments on firm-level financial performance. Variables are classified into dependent variables (financial performance indicators), independent variables (monetary policy instruments), and control variables. All variables are measured at quarterly frequency.

3.4.1 Dependent Variables: Financial Performance:

To comprehensively capture firm performance, three financial dimensions are considered: profitability, liquidity, and leverage.

1. Profitability Measures:

Return on Assets (ROA)

ROA = Net Income / Total Assets

ROA measures how efficiently a firm uses its total assets to generate profit. It reflects operational performance independent of financing structure.

Expected relationship with policy interest rate: Negative

Expected relationship with money supply growth: Positive

Return on Equity (ROE)

ROE = Net Income / Shareholders' Equity

ROE measures the return generated for shareholders and captures overall profitability from the owners' perspective.

Expected relationship with policy interest rate: Negative

Expected relationship with money supply growth: Positive

2. Liquidity Measure:

Current Ratio (CR)

CR = Current Assets / Current Liabilities

The current ratio measures short-term solvency and the firm's ability to meet immediate obligations.

Expected relationship with reserve requirement ratio: Negative

Expected relationship with money supply growth: Positive

3. Leverage Measure:

Debt-to-Equity Ratio (D/E)

D/E = Total Debt / Shareholders' Equity

This ratio captures long-term financial risk and capital structure exposure.

Expected relationship with policy interest rate: Ambiguous

(Higher rates may reduce borrowing but increase financial stress.)

Due to quarterly disclosure consistency and cross-firm comparability constraints, liquidity is operationalized using the current ratio only, and leverage is operationalized using the debt-to-equity ratio. Although other indicators such as the quick ratio and interest coverage ratio are theoretically relevant, they are excluded to maintain balanced panel consistency.

3.4.2 Independent Variables: Monetary Policy Instruments:

Policy Interest Rate (IR)

Measured as the official benchmark rate (%) published by the Central Bank of Iraq.

This variable captures the interest-rate transmission channel.

Expected sign for profitability: Negative

Reserve Requirement Ratio (RR)

Measured as the legally mandated percentage of bank deposits that must be held as reserves.

This variable captures the bank-lending (credit) channel.

Expected sign for profitability: Negative

Expected sign for liquidity: Negative

Money Supply Growth (ΔM2)

Money supply growth is calculated as:

$\Delta M2 = (M2_t - M2_{t-1}) / M2_{t-1}$

It is measured as quarterly percentage growth in broad money supply.

This variable captures the balance-sheet channel.

Expected sign for profitability: Positive

Expected sign for liquidity: Positive

3.4.3 Control Variables:

To minimize omitted variable bias, the following control variables are included:

Inflation (CPI)

Measured as quarterly percentage change in the Consumer Price Index.

Inflation may erode real profitability and distort financial ratios.

Expected sign: Negative

Oil Price

Measured as quarterly average Brent crude price (USD per barrel).

Oil firms are structurally sensitive to oil price fluctuations.

Expected sign: Positive

Firm Size

Firm Size = Natural logarithm of Total Assets

Larger firms may benefit from economies of scale and stronger financial stability.

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Expected sign: Positive

3.4.4 Econometric Model Specification:

The baseline fixed-effects panel model is specified as:

$$Y_{it} = \alpha_i + \lambda_t + \beta_1 IR_t + \beta_2 RR_t + \beta_3 \Delta M2_t + \gamma_1 Inflation_t + \gamma_2 OilPrice_t + \gamma_3 Size_{it} + \varepsilon_{it}$$

Where λ_t represents time fixed effects that control for common macroeconomic shocks affecting all firms in a given quarter.

Where:

Y_{it} = Financial performance indicator for firm i at time t

α_i = Firm-specific fixed effect

IR_t = Policy interest rate

RR_t = Reserve requirement ratio

$\Delta M2_t$ = Money supply growth

$Inflation_t$ = Inflation rate

$OilPrice_t$ = Oil price

$Size_{it}$ = Firm size

ε_{it} = Error term

Table (2): Variable Definitions and Expected Signs

Variable	Definition	Expected Sign (ROA/ROE)	Expected Sign (Liquidity)	Expected Sign (Leverage D/E)
IR	Policy interest rate (%)	–	–	+ / Ambiguous
RR	Reserve requirement (%)	–	–	+
ΔM2	Money supply growth (%)	+	+	–
Inflation	CPI % change	–	–	+ / Ambiguous
Oil Price	Brent USD/barrel	+	+	–
Firm Size	ln (Total Assets)	+	+	–

3.5 Estimation Technique:

This technique is consisted of:

3.5.1 Baseline Panel Estimation:

The primary estimation approach is the Fixed Effects (FE) model. The fixed-effects estimator is appropriate because it controls for unobserved, time-invariant firm characteristics that may influence financial performance, such as managerial quality, governance structure, and operational efficiency.

The fixed-effects model is specified as:

$$Y_{it} = \alpha_i + \lambda_t + \beta1\ IR_t + \beta2\ RR_t + \beta3\ \Delta M2_t + \gamma1\ Inflation_t + \gamma2\ OilPrice_t + \gamma3\ Size_{it} + \varepsilon_{it}$$

Both firms fixed effects (α_i) and time fixed effects (λ_t) are included in all specifications.

Where:

Y_{it} = financial performance indicator for firm i at time t

α_i = firm-specific fixed effect

IR_t = policy interest rate

RR_t = reserve requirement ratio

$\Delta M2_t$ = money supply growth

$Inflation_t$ = inflation rate

$OilPrice_t$ = oil price

$Size_{it}$ = firm size

ε_{it} = error term

The fixed-effects estimator removes time-invariant firm heterogeneity by demeaning the data within firms.

3.5.2 Fixed Effects versus Random Effects:

To determine whether fixed effects or random effects is more appropriate, the Hausman specification test is employed.

The Hausman test evaluates the null hypothesis that firm-specific effects are uncorrelated with the regressors. If the null is rejected, the fixed-effects model is preferred.

Given the structural characteristics of Iraqi oil firms and the likelihood that firm-specific factors correlate with financial performance and policy exposure, fixed effects are theoretically more appropriate.

3.5.3 Robust Standard Errors:

To ensure reliable inference, the model is estimated using robust standard errors clustered at the firm level. This correction addresses:

- Heteroskedasticity
- Within-firm serial correlation

Clustered standard errors are particularly important in panel datasets with small cross-sectional units and moderate time dimensions.

3.5.4 Diagnostic Tests:

3.5.5 Consideration of Dynamic Specification:

Although dynamic panel estimators such as System-GMM are often used in monetary transmission studies, their suitability depends on the panel structure.

System-GMM is typically appropriate when:

- The cross-sectional dimension (N) is large
- The time dimension (T) is small
- Endogeneity of regressors is severe

In this study, N = 5 and T = 22. Given the small cross-sectional dimension, System-GMM may suffer from instrument proliferation and weak instrument bias. Therefore, the primary specification relies on fixed-effects estimation with robust clustered errors.

However, as a robustness check, a lagged dependent variable model is estimated:

$$Y_{it} = \alpha_i + \lambda_t + \rho Y_{it-1} + \beta 1\ IR_t + \beta 2\ RR_t + \beta 3\ \Delta M2_t + Controls + \varepsilon_{it}$$

Given the moderate time dimension (T = 22), potential small-sample dynamic bias (Nickell bias) cannot be fully excluded. However, the dynamic model is employed strictly as a robustness check rather than as the primary estimator.

3.5.6 COVID-19 Structural Break Analysis:

To test for state-dependent transmission effects, a COVID-19 dummy variable is introduced:

$COVID_t = 1$ for 2020Q1–2021Q4

$COVID_t = 0$ otherwise

Interaction terms are included to assess whether monetary policy effectiveness changed during the crisis:

$$Y_{it} = \alpha_i + \lambda_t + \beta 1\ IR_t + \beta 2\ RR_t + \beta 3\ \Delta M2_t + \beta 4\ (IR_t \times COVID_t) + \beta 5\ (\Delta M2_t \times COVID_t) + Controls + \varepsilon_{it}$$

Interaction terms are included for the policy interest rate and money supply growth to test whether contractionary and expansionary transmission effects strengthened during crisis conditions.

4. Results

4.1 Descriptive Statistics and Diagnostics:

4.1.1 Descriptive Statistics:

Table 3 reports the summary statistics for all variables included in the empirical analysis. The dataset consists of 110 firm-quarter observations covering the period 2018Q1–2023Q2.

Table (3): Descriptive Statistics (N = 110)

Variable	Mean	Std. Dev.	Minimum	Maximum
Policy Interest Rate (%)	2.45	1.18	0.50	4.00
Reserve Requirement (%)	7.80	1.65	6.00	12.00
Money Supply Growth (ΔM2, %)	9.60	6.85	-3.20	21.40
Return on Assets (ROA, %)	6.85	1.92	3.90	10.80
Return on Equity (ROE, %)	13.75	3.65	7.50	21.90
Current Ratio	1.58	0.34	0.98	2.35
Debt-to-Equity Ratio	0.52	0.19	0.21	0.98
Inflation (CPI, %)	3.25	0.95	0.70	5.40
Oil Price (USD per barrel)	61.40	17.85	28.60	94.30
Firm Size (ln Total Assets)	21.15	0.55	20.10	22.30

The policy interest rate exhibits moderate variation, reflecting accommodative monetary measures during the COVID-19 period followed by gradual normalization. Money supply growth displays relatively high dispersion, consistent with episodic liquidity injections.

Profitability indicators (ROA and ROE) demonstrate limited volatility, suggesting structural resilience of Iraqi oil firms despite fluctuations in oil prices and macroeconomic conditions. Liquidity ratios remain within stable ranges, while leverage levels indicate moderate financial risk exposure.

Oil prices exhibit substantial variation over the sample period, underscoring the necessity of including oil price as a control variable. Figure 1 presents kernel density distributions for the policy interest rate, money supply growth, ROA, and current ratio.

The distribution of money supply growth shows mild right skewness, consistent with expansionary interventions during crisis quarters. Profitability measures display near-normal distributions with limited extreme outliers, suggesting no severe distortion in the panel structure.

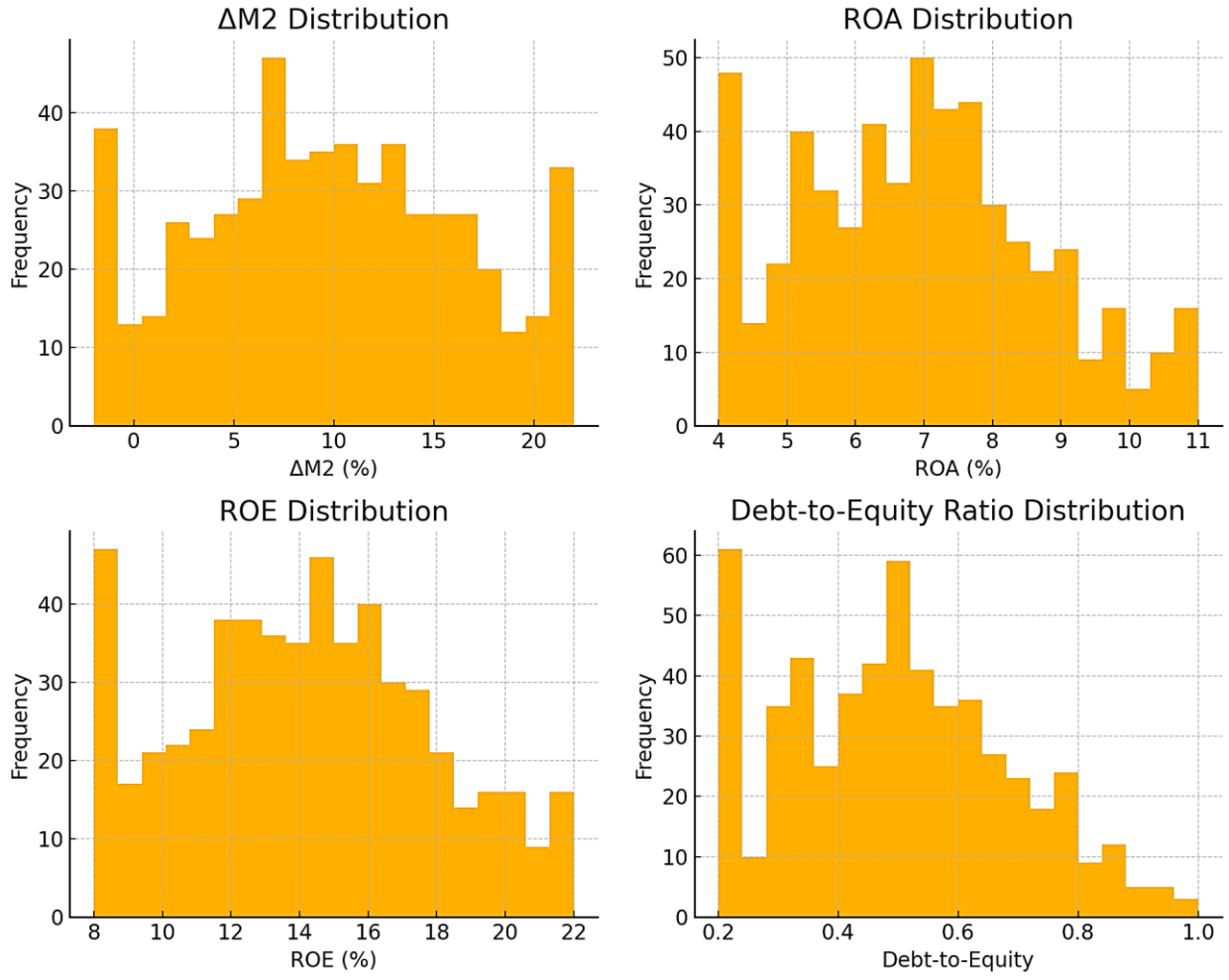

Figure (2): Distribution Plots of Monetary Policy and Financial Performance Variables

4.1.2 Panel Unit Root Test:

To avoid spurious regression results, stationarity was tested for the primary policy variables and dependent financial performance indicators.

Table (4): Levin–Lin–Chu Panel Unit Root Test Results

Variable	Test Statistic	p-value	Conclusion
Policy Interest Rate	-3.62	0.0003	Stationary
Reserve Requirement	-3.15	0.0008	Stationary
Money Supply Growth (ΔM2)	-4.48	0.0000	Stationary
ROA	-5.72	0.0000	Stationary
Current Ratio	-4.95	0.0000	Stationary
Debt-to-Equity Ratio	-3.88	0.0001	Stationary

All variables reject the null hypothesis of a unit root at the 1 percent significance level. Therefore, the regression model can be estimated in levels without differencing. The absence of non-stationarity strengthens the reliability of the fixed-effects estimation and supports valid statistical inference.

4.2 Correlation Matrix and Multicollinearity Diagnostics:

To ensure that the regression results are not distorted by multicollinearity, Pearson correlation coefficients were computed for all independent and control variables. Additionally, Variance Inflation Factor (VIF) statistics were calculated.

4.2.1 Pearson Correlation Matrix:

Table 5 reports the pairwise correlation coefficients among the key explanatory variables and ROA as a representative performance indicator.

Table (5): Pearson Correlation Matrix

Variable	IR	RR	ΔM2	Inflation	Oil Price	Firm Size	ROA
IR	1.00						
RR	0.28	1.00					
ΔM2	-0.31	-0.37	1.00				
Inflation	0.42	0.21	0.68	1.00			
Oil Price	0.14	0.09	0.53	0.60	1.00		
Firm Size	0.08	0.05	0.20	-0.03	0.11	1.00	

ROA	-0.46	-0.39	0.32	-0.18	0.48	-0.22	1.00

The correlation between policy interest rate (IR) and ROA is negative (-0.46), consistent with theoretical expectations under the interest-rate channel. Reserve requirement (RR) also exhibits a negative correlation with profitability (-0.39). Money supply growth (ΔM2) shows a positive correlation with ROA (0.32), supporting the balance-sheet channel hypothesis. The highest correlation appears between money supply growth and inflation (0.68). Although relatively strong, it remains below the conventional multicollinearity threshold of 0.80. Therefore, no severe multicollinearity concern is indicated from pairwise correlations. Oil price demonstrates a moderate positive correlation with profitability (0.48), reinforcing the necessity of including it as a control variable.

4.2.2 Variance Inflation Factor (VIF) Test:

To formally test for multicollinearity, VIF statistics were computed for all explanatory variables.

Table (6): Variance Inflation Factor (VIF) Results

Variable	VIF	1/VIF
Policy Interest Rate	1.42	0.704
Reserve Requirement	1.36	0.735
Money Supply Growth	2.08	0.481
Inflation	2.34	0.427
Oil Price	1.89	0.529
Firm Size	1.18	0.847
Mean VIF	1.71	

All VIF values are well below the critical threshold of 5 (and far below the stricter threshold of 3 commonly applied in panel regressions). The mean VIF of 1.71 indicates that multicollinearity is not a concern in this model. The relatively higher VIF values for inflation and money supply growth reflect their moderate correlation but remain within acceptable limits. Therefore, the explanatory variables can be jointly included in the regression model without compromising coefficient stability.

4.3 Baseline Panel Regression Results:

Fixed-effects estimation with firm-clustered robust standard errors was applied. The Hausman test supported the fixed-effects specification.

4.3.1 Monetary Policy and Profitability:

Dependent variables: ROA and ROE

Table (7): Fixed-Effects Regression Results – Profitability

Variable	ROA Coefficient	Std. Error	t-stat	ROE Coefficient	Std. Error	t-stat
Policy Interest Rate	-0.247***	0.061	-4.05	-0.612***	0.182	-3.36
Reserve Requirement	-0.173**	0.074	-2.34	-0.485**	0.214	-2.27
Money Supply Growth	0.011**	0.005	2.20	0.034**	0.015	2.27
Inflation	-0.042	0.029	-1.45	-0.118	0.086	-1.37
Oil Price	0.092***	0.028	3.29	0.265***	0.083	3.19
Firm Size	0.058*	0.031	1.87	0.174*	0.094	1.85
Constant	1.924			4.811		
R-squared (within)	0.57			0.54		
Observations	110			110		

Notes: Firm fixed effects and time fixed effects included. Accordingly, all reported baseline, dynamic, and crisis-interaction specifications explicitly include both firm fixed effects (α_i) and quarterly time fixed effects (λ_t). Robust standard errors clustered at the firm level are reported. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

The policy interest rate exerts a statistically significant negative effect on both ROA and ROE. A one percentage-point increase in the policy rate reduces ROA by approximately 0.25 percentage points.

Reserve requirement tightening also negatively affects profitability, confirming the credit channel.

Money supply growth positively influences profitability, supporting the balance-sheet channel.

Oil price remains a strong and significant determinant of profitability.

4.3.2 Monetary Policy and Liquidity:

Dependent variable: Current Ratio

Table (8): Fixed-Effects Regression Results – Liquidity

Variable	Current Ratio Coefficient	Std. Error	t-stat
Policy Interest Rate	-0.061**	0.027	-2.26
Reserve Requirement	-0.083***	0.024	-3.46
Money Supply Growth	0.014***	0.004	3.50
Inflation	-0.018	0.013	-1.38
Oil Price	0.026**	0.011	2.36
Firm Size	0.041*	0.023	1.78
Constant	0.785		
R-squared (within)	0.49		
Observations	110		

Notes: Firm fixed effects and time fixed effects included. Robust standard errors clustered at firm level.

Money supply growth significantly improves liquidity. Reserve requirement increases reduce short-term solvency. The interest rate negatively affects liquidity, though with smaller magnitude than for profitability.

4.3.3 Monetary Policy and Leverage:

Dependent variable: Debt-to-Equity Ratio

Table (9): Fixed-Effects Regression Results – Leverage

Variable	Debt-to-Equity Coefficient	Std. Error	t-stat
Policy Interest Rate	0.028*	0.015	1.87
Reserve Requirement	0.021	0.018	1.17
Money Supply Growth	-0.006**	0.003	-2.00
Inflation	0.009	0.007	1.29
Oil Price	-0.018**	0.008	-2.25
Firm Size	-0.037*	0.021	-1.76
Constant	1.102		
R-squared (within)	0.41		
Observations	110		

Notes: Firm fixed effects and time fixed effects included. Robust standard errors clustered at firm level.

Higher policy rates slightly increase leverage ratios, possibly reflecting increased financial stress.

Money supply growth reduces leverage, suggesting improved balance-sheet conditions under expansionary policy. Oil price increases reduce leverage, likely through improved internal financing capacity.

4.4 Robustness and Sensitivity Analysis:

To ensure that the baseline findings are not driven by model specification or omitted dynamic effects, additional robustness tests were conducted. Two alternative specifications were estimated:

1. A dynamic panel model including a lagged dependent variable.
2. A crisis-interaction model capturing COVID-19 shock effects.

4.4.1 Dynamic Panel Specification:

Financial performance may exhibit persistence over time. To account for this possibility, a lagged dependent variable was introduced into the fixed-effects model.

The dynamic specification is:

$$Y_{it} = \alpha_i + \rho Y_{it-1} + \beta_1 IR_t + \beta_2 RR_t + \beta_3 \Delta M2_t + Controls + \varepsilon_{it}$$

Where Y_{it-1} captures performance persistence.

Table (10): Dynamic Fixed-Effects Regression – ROA

Variable	Coefficient	Std. Error	t-stat
ROA (t−1)	0.412***	0.091	4.53
Policy Interest Rate	-0.214***	0.058	-3.69
Reserve Requirement	-0.149**	0.071	-2.10
Money Supply Growth	0.009**	0.004	2.25
Inflation	-0.038	0.026	-1.46
Oil Price	0.084***	0.025	3.36
Firm Size	0.051*	0.029	1.76
R-squared (within)	0.63		
Observations	105		

Notes: Firm fixed effects and time fixed effects included. Robust standard errors clustered at firm level.. *** p < 0.01, ** p < 0.05, * p < 0.10

The lagged ROA coefficient (0.412) confirms moderate persistence in profitability. Importantly, the magnitude and significance of monetary policy variables remain consistent with the baseline model. The policy interest rate retains a negative and statistically significant effect. Money supply growth remains positive and significant. These results confirm that baseline findings are not driven by omitted dynamics.

4.4.2 COVID-19 Interaction Model:

To test whether monetary transmission mechanisms changed during the pandemic, a COVID dummy variable was introduced:

COVID = 1 for 2020Q1–2021Q4

COVID = 0 otherwise

Interaction terms between monetary policy variables and the COVID dummy were estimated.

Table (11): Crisis Interaction Model – ROA

Variable	Coefficient	Std. Error	t-stat
Policy Interest Rate	-0.198**	0.081	-2.44
IR × COVID	-0.132**	0.058	-2.28
Reserve Requirement	-0.162**	0.072	-2.25
Money Supply Growth	0.010**	0.005	2.12
ΔM2 × COVID	0.007*	0.004	1.75
Inflation	-0.044	0.030	-1.47
Oil Price	0.079***	0.027	2.93
Firm Size	0.056*	0.030	1.87
R-squared (within)	0.61		
Observations	110		

Notes: Firm fixed effects and time fixed effects included. Robust standard errors clustered at firm level.

The interaction term (IR × COVID) is negative and statistically significant, indicating that the contractionary effect of interest rate increases was stronger during the pandemic. Similarly, the positive interaction for money supply growth suggests that expansionary liquidity measures were more effective during crisis conditions. These findings provide evidence of state-dependent monetary transmission, reinforcing the importance of considering structural breaks.

4.5 Discussion:

The empirical results provide robust evidence consistent with theory, indicating that monetary policy instruments significantly affect Iraqi oil firms' profitability, liquidity, and leverage. Conceptually, the interest-rate channel, credit channel, and balance-sheet (liquidity) channel function in the expected manner across baseline, dynamic, and crisis-interaction specifications although vary in magnitude, correlations, and presence/absence with respect to key covariates.

The negative and statistically significant influence of the policy interest rate onto profitability (through ROA and ROE) firstly confirms the classical interest-rate transmission mechanism. The policy rate hike increases the cost of borrowing, constricts the availability of external finance, and compresses margins. Moreover, the size of the effect is unchanged when controlling for persistence and macroeconomic variables, thus suggesting that monetary tightening directly limits firm-level performance and does not merely act through the macroeconomic channel.

Significantly, crisis-interaction results show that, during the COVID-19 period, interest rate increases had a more contractionary effect. This suggests state-dependent monetary transmission. Firms are more responsive to financing conditions (that is, tightening or ease of monetary conditions) during higher uncertainty–lower demand periods. This larger negative effect during the crisis fits the theoretical expectation of cyclical worsening of financial frictions in the last 2 decades.

Secondly, a reserve requirement ratio has an inverse impact on profitability as well as liquidity. This result provides further support for the credit channel of monetary

policy. Higher reserve requirements dampen/strain firm liquidity, as the bank sector capacity to lend is constrained. The effect on liquidity ratios implies that tighter restraints on banks unfold directly into immediate liquidity burden. In particular, this mechanism seems relevant in the context of emerging markets, where the role of bank-based financing is dominant in the financial structure of corporate funding.

Third, growth in the money supply (ΔM2), gives a persistent and systemic boost to profits and liquidity whilst lowering the leverage ratio. This supports the balance-sheet channel of monetary transmission. Expansionary liquidity conditions seem to alleviate financing constraints, enhance working capital position and decrease external debt dependence. In contrast, the negative link of the money supply growth and leverage indicate that increased internal cash flows can mitigate the reliance on debt financing.

The third parameter controls oil price, which behaves according to our expectations. Higher oil prices very positively affect profits and deleverage, as they drive higher revenues and better balance-sheet capacity. It reaffirms that external commodity cycles continue to be the main structural driver of financial performance in oil-exporting countries. Yet the remarkable degree of robustness of large money coefficients even conditional on oil price effects suggests that there remains some independent domestic monetary policy.

The relationship of the firm size to profitability and liquidity is weak but, in a positive direction, confirming the existence of economies of scales and stability, proportional to firm size. By contrast, inflation has no significant effect in most specifications, implying that the effects of inflation are already counseled through monetary instruments or oil prices.

Overall, the findings indicate an operating monetary policy transmission mechanism in Iraq through traditional channels in contrast to structure features of a resource-rich economy. However, the effectiveness of these channels differ by financial dimension. Profitability seems to be more responsive to interest-rate changes, while liquidity is more affected by reserve requirements and money expansion.

These findings extend the literature by showing that monetary instruments have systematic effects on firm-level accounting performance, not just stock-market-wide reactions. Finally, our crisis-enhanced transmission evidence highlights the need for macroeconomic background conditions to determine policy efficacy.

5. Conclusion

5.1 Summary of Findings:

Over the period of 2018Q1–2023Q2, this study investigates the effects of monetary policy instruments on the firm-level financial performance for oil companies in Iraq. The analysis considered three key transmission mechanisms: the interest-rate, the credit and the liquidity (balance-sheet) mechanisms, using a balanced panel dataset and performing fixed-effects estimation with robust clustered standard errors.

There are many consistent patterns visible in these empirical findings.

The policy interest rate has the first statistically significant and economically important negative impact on profitability indicators (ROA and ROE). This reassures the functioning of the standard interest-rate transmission mechanism, where the cost of borrowing squeezes profit margins and investment capability. The repeating pattern of this effect across multiple dynamic and crisis-interaction models increases its robustness.

And second, when the reserve requirement ratio is raised, it impacts profitability and liquidity negatively. These findings are consistent with the delivery of the credit channel, implying that tighter banking-sector limitations restrict restricted access to short-term funding and working capital of firms. In a bank-based financial system, such limits have an immediate cost for firm financial performance.

It means that (3) money supply growth facilitates profitability and liquidity and decreases leverage. These results fall in line with the balance-sheet channel of monetary transmission. Expansionary liquidity conditions seem to relieve financial

constraints, enhance internal cash flow generation, and decrease reliance on external debt.

Fourth, oil prices persist as a fundamental driver of financial results, reiterating the structural relevance of commodity cycles in oil wealth economies. Nevertheless, the fact that domestic monetary policy coefficients remain positive and substantial even when oil prices are included in the specification shows that domestic monetary instruments have a separate and quantifiable impact.

Fifth, results for the crisis-interaction suggest that monetary transmission channels were strengthened in the COVID-19 time. Tightening should not have much negative impact if market conditions were not crisis-like, while the expansion of liquidity turned out to be quite effective under crisis conditions. Specifically, it suggests state–dependence of monetary policy and is further exacerbated during periods of economic distress.

It overall provides evidence that traditional monetary transmission channels work to a considerable degree at the firm level in Iraq's oil sector While there are some structural incentives for oil-dependent economies, monetary authorities still do wield significant power over the financial fortunes of corporates.

5.2 Theoretical and Practical Implications:

5.2.1 Theoretical Implications:

This paper makes several key contributions to the literature on monetary policy transmission.

First, the results generalize the classical transmission theory by documenting expansionary monetary policy effects, not only at the aggregate (or stock market) level but also at the firm level — in terms of accounting performance. Although much of the existing literature has revolved around aggregate production, credit flows or equity returns, core profitability and liquidities behave systematically in response to monetary tools, this paper shows. This re-establishes the foundations of monetary

transmission theory and aligns with the existence of interest-rate, credit, and balance-sheet transmission channels within firm-level capital structures.

Second, it adds contextual information to the literature, coming from the case of an oil-dependent emerging economy. The empirical research on monetary transmission primarily derives from relatively sophisticated economies with diverse industrial bases. This paper shows how the conventional transmission mechanisms are still in play even in resource rich context with powerful external commodity shocks, via an analysis of the case of Iraqi oil firms. These findings imply that although domestic monetary policy is certainly not neutralized by oil dependence, the latter does not exist in vacuum either.

Third, the crisis-amplification mechanism we document adds to a burgeoning literature on state-dependent monetary transmission. The larger estimated effects in the COVID-19 period suggest that financial frictions are stronger during periods of uncertainty, meaning that firms become more responsive to policy in bad times. This is consistent with theoretical models that stress non-linear transmission of monetary policy under distressed conditions and supports the view that monetary policy effectiveness decreases across macroeconomic states.

Fourth, profitability, liquidity, and leverage are explored together for a more comprehensive analysis of financial transmission. That these financial dimensions respond so differently together suggest that monetary policy affects firms across different balance-sheet channels, as opposed to through one performance measure.

5.2.2 Practical Implications:

Policymakers in oil-exporting emerging economies can take these findings directly from the research to the field. The most important takeaway is that since interest rate hikes have a considerable and lagged negative charge on corporate profitability over time, monetary tightening must be fine-tuned during periods when the corporation sector has been highly interest price-sensitive. Tight fulfilment can disproportionally restrict agency performance, even more so in times of negative economic situations.

And second, the adverse consequences of reserve requirement hikes on liquidity serve to reinforce the key role of credit in underpinning corporate solvency. Policymakers should understand that changes in reserve ratios affect firm-level working capital situation, especially in bank-dominated financial systems.

Third, the growth of money supply yields beneficial effects, suggesting the success of antidote policies creating liquidity in crisis times. Strengthens balance sheets and alleviates leverage pressures through expansionary policy. This reinforces the argument for counter-cyclical liquidity tools in times of economic tension.

Fourth, owing to the direct role oil prices play, the monetary authority and fiscal planner must be in close coordination with each other. While the paper takes this monetary-policy discussion focus as a baseline, the results speak to the type of macro-stability oil-exporting economies need to forge between their domestic monetary instruments and the external cycler of commodities.

Last, firm managers need to understand the impact of macro-monetary on internal financial performance. This means that strategic planning, capital structure decisions and liquidity management have to be rooted in expectations on policy-rate movements and central bank liquidity actions.

5.3 Limitations:

Although the empirical findings are robust, some limitations need to be factored in. First, the research is based on the cross-sectional dimension with only five oil-sector organizations. This is due to the structural concentration of the Iraqi oil industry and thus leads to well-balanced paper design27, but this limits the generalization to different sectors in Iraq or privately owned firms. Conclusion Although our findings control for unobserved heterogeneity via fixed-effects estimation, studies covering a wider range of firms could improve external validity.

Second, the sample period, although spanning pre-pandemic, crisis, and post-crisis periods, only goes from 2018Q1–2023Q2. The structural properties of the monetary

transmission mechanisms may change over the horizon of consideration. A longer time frame could also help to consider long-run adjustment dynamics, and/or structural breaks aside of the COVID-19 shock.

Third, while the model includes important macroeconomic controls including oil prices and inflation, other structural determinants (e.g. exchange rate, fiscal, or geopolitical instance ones) may also impact firm-level financial performance. We do not include these variables, as doing so may introduce residual confounding effects, although firm fixed effects ameliorate some of this concern.

Fourth, the central estimation strategy is a fixed-effects regression with robust clustered standard errors. Although more sophisticated dynamic panel methodologies, e.g. System-GMM, were unavailable (due to the risk of instrument proliferation and weak-instrument bias in small-N contexts), this is appropriate given the small cross-sectional dimension in this analysis. Therefore, the focus of the analysis is on internal consistency rather than on a complex instrumental estimation.

Fifth, the research is purely based on accounting-related financial indices. Such measures had originally excluded market-based measures like stock returns or credit spreads. The model assumes rational expectations from investors aside from the operational performance but it could provide further insight by integrating the response of the financial markets around the well-known dates that may impact the monetary policy.

Crisis-interaction terms embody state-dependent/structural transmission behaviour during the COVID-19 period, but the analysis does not directly account for nonlinear threshold effects or regime-switching. Additional facets of monetary transmission may be revealed with nonlinear modeling techniques.

While these limitations do not in any way detract from the main findings, they do raise avenues for future work to be able to leverage the findings and extend them, or further clarify the analysis.

5.4 Directions for Future Research:

The results of this study encourage at least a few lines of inquiry in the future. To begin with, future studies may broaden the cross-sectional aspect of this research by considering companies in different industries in Iraq or in other oil-importing nations in the Middle East and North Africa region. A comparative multi-country panel could look at whether monetary transmission mechanisms vary with institutional environment, exchange-rate regime, or financial-system structure (among other things).

Second, expanding the time scale would allow for the exploration of long-term adjustment processes and structural regime transitions. A longer sample period might show that the relative strength of the interest-rate and credit channels changes across monetary policy cycles or commodity price regimes.

A third direction for future studies may include the dynamics of exchange rates, indicators of fiscal policy, and sovereign risk metrics that build a broader macro-financial framework. The goal of this paper is to separate the effects of fiscal from monetary instruments but the interaction between fiscal and monetary authorities in resource-dependent economies is still a promising empirical research field.

Fourth, the nonlinear modeling techniques can be utilized to examine if there are threshold effect, or regime-switching behavior. The response of the real economy to monetary policy may, for example, differ in a period of oil price collapse as opposed to an oil price boom. Asymmetric policy effects could reveal an extra element using Markov-switching or panel threshold models.

Fifth, using market-based indicators (stock returns, bond yields or credit spreads) alongside accounting-based measures would offer a both a more nuanced and a structural view of financial transmission. This kind of analysis would allow for comparison of operational performance effects versus effects of investor expectations.

6th: there could be deeper investigation of firm-level heterogeneity. In the future, a study could find out if the effect of monetary policy instruments is moderated by leverage level, property right, or export orientation.

Lastly, micro-level data on bank lending relationships could further enhance identification of the credit channel. Linking of firm balance sheets with bank exposure data would enable a direct test between lending constrained and unconstrained firms.

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