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The Impact of Monetary Policy on Iraq Stock Exchange

Nabeel Mahdi Aljanabi
College of Administration and Economics, University of Al-Qadisiyah, Iraq

ABSTRACT: Previous research indicates that the stock market plays an important role in transmitting monetary policy shocks to the real economy. Building on this premise, this study explores the relationship between the nominal and real returns of the Iraq Stock Exchange (ISX) general index and monetary policy in Iraq by employing a specialised structural identification method – the sign-restriction approach. Monetary policy shocks are identified by imposing theoretically consistent sign restrictions on the impulse response functions. The analysis focuses on the effects of monetary policy shocks on nominal and real stock returns across three distinct monetary regimes: (i) the restrictive (contractionary) monetary policy periods (2004–2007 and 2011–2012), (ii) the accommodative (expansionary) monetary policy periods (2008–2010 and 2013–2016), and (iii) the output-targeting monetary policy period (2017–2024). Quantitatively, the study shows that during the restrictive monetary regime a contractionary policy shock causes a sizeable decline of about 0.43 percent in the nominal return of the ISX general index, while the response of the real return is almost nil and tends towards zero. This outcome is consistent with the iterative and empirical evidence in the literature. Surprisingly, the accommodative and output-targeting regimes generate a weak but noticeable positive response (0.04) in the nominal return and a negative response in the real return of the market index. The results suggest that the narrowness of the Iraqi stock market, its weak integration with the domestic economy, and the structural characteristics of the financial system all tend to dampen the transmission of monetary policy to stock returns.

KEYWORDS: Monetary Policy, Stock Market, Iraq, ISX, SVAR Model, Nominal and Real Returns

1. INTRODUCTION

Monetary policy in Iraq relies, in its philosophy and operational framework, on information- and signal-based rules to generate stability in the financial market in a manner that is consistent with both domestic and global economic developments. This approach is considered an alternative to direct intervention in the market, which may create distortions or undesirable divisions in financial operations. The signalling and information tools derive essentially from the Central Bank of Iraq's policy rate, which represents the key instrument of monetary policy. Monetary policy in Iraq has alternated between two main stances: a restrictive stance aimed at containing and reducing inflation through instruments such as raising interest rates, and an accommodative stance aimed at stimulating economic activity and encouraging growth through lowering interest rates and expanding liquidity. In recent years, the Central Bank has also adopted output-targeting and selective liquidity instruments to support aggregate demand during downturns and to restrain liquidity during inflationary episodes. Against this background, the current study poses the following central question: What are the effects of monetary policy on stock returns in the Iraq Stock Exchange? To answer this question, the study employs the sign-restriction methodology to measure the impact of monetary policy on stock returns, analysing the Central Bank of Iraq's policy across three monetary periods: (1) a restrictive/tight period (2004–2007 and 2011–2012), (2) an accommodative period (2008–2010 and 2013–2016), and (3) an output-targeting period (2017–2024). The aim is to obtain differentiated results that reflect the nature of the policy stance adopted in each period. The research problem stems from the fact that the Iraqi stock market is narrow, shallow and weakly influential in the domestic economy; hence, the effects of monetary policy are often imperceptible to market participants. The study therefore advances the hypothesis that restrictive monetary policy exerts a stronger and more negative effect on the return of the ISX general index than accommodative or output-targeting policies during the study period.

2. THEORETICAL FRAMEWORK: Channels of Monetary Policy Transmission to Stock Returns

Central banks use monetary policy to achieve core macroeconomic objectives, most notably price stability and high levels of employment. The transmission of monetary policy to the real economy occurs largely through financial markets. Changes in policy rates and liquidity conditions influence interest rates, credit costs, asset valuations, market liquidity, risk appetite, and wealth, all of which ultimately feed through to stock returns. Several key channels can be highlighted:

• Interest Rate Channel: A cut in policy interest rates reduces firms' borrowing costs, thereby encouraging investment and raising the present value of expected future cash flows. This

leads to higher stock prices and returns. Conversely, a rate hike has the opposite effect.

• Liquidity Channel: An expansionary monetary policy injects liquidity into the financial system, increasing the demand for financial assets, including equities, and hence supporting higher prices.

• Risk-Taking Channel: A fall in interest rates lowers the attractiveness of fixed-income instruments and encourages investors to rebalance portfolios towards riskier assets such as stocks, which may amplify the stock market's response to monetary news.

• Income and Wealth Effects: Lower interest rates can stimulate consumer spending through cheaper credit (mortgages, auto loans, personal credit), which in turn boosts corporate earnings and supports stock valuations. Earlier empirical studies, such as Thorbecke (1997) and Rigobon and Sack (2003), found a significant negative relationship between policy rate increases and broad stock market returns, whereas other studies, such as Hayford and Malliaris (2004) and Bernanke and Kuttner (2005), reported weaker or insignificant effects. The more recent strand of the literature has increasingly adopted structural vector autoregressive (SVAR) models with sign restrictions following Uhlig (2005), who proposed identifying monetary policy shocks by imposing theory-consistent signs on the impulse response functions rather than relying on recursive (Cholesky) orderings.

3. REVIEW OF PREVIOUS STUDIES

The empirical literature on the effects of monetary policy on stock markets is vast and, at times, contradictory. Early studies such as Homa and Jaffee (1971) and Hamburger and Kockin (1972) assumed the existence of a systematic and significant relationship between the money supply and the stock market. Shortly afterwards, Rozeff (1974) challenged this conclusion, arguing that money supply changes have no predictive power over stock prices. Over time, however, the dominant empirical finding has become that stock prices tend to fall (rise) in response to contractionary (expansionary) monetary policy shocks. Bernanke and Kuttner (2005) confirmed Davidson and Froyen's (1982) view that unexpected monetary policy actions generate the bulk of stock market reactions, and they showed that an unanticipated 25-basis-point cut in the policy rate is associated with about a 1% rise in broad stock indices. Other studies, such as Park and Ratti (2000), Neri (2002), Maio (2014), and Chundakkadan and Sasidharan (2019), likewise found that stock returns react negatively to contractionary policy shocks and that the magnitude of this response may vary across sectors, countries and phases of the business cycle. More nuanced evidence was reported by Gali and Gambetti (2015), Gambetti (2015) and related work, where stock prices were found to rise persistently in response to some contractionary policy shocks – a result sometimes referred to as the "price puzzle" or "shock masking" problem in sign-restriction VARs. Studies such as Bouakez et al. (2013) also cautioned that the interaction between monetary policy and stock returns may be substantially weaker than previously thought and that sectoral heterogeneity matters. Kurov (2010, 2012) and Kurov and Gu (2016) showed that investor sentiment and periods of financial stress can amplify or reverse the typical response of stock markets to monetary policy announcements.

4. DATA AND MODEL VARIABLES

The study uses monthly data covering the period 2004–2024. Seven macroeconomic and financial variables are employed to capture the economic environment in which the ISX operates, in addition to the stock return variables. The variables are:

1. Economic growth (EG)
2. GDP deflator (Mgdp)
3. Consumer Price Index (CPI)
4. Policy interest rate (R)
5. Change in money supply (M2)
6. Exchange rate gap between the official and parallel Iraqi dinar rates (EXG)
7. ISX general index, from which nominal and real stock returns are computed.

The nominal stock return (NSR) at time t is calculated as:

$$NSR_t = (ISX_t - ISX_{t-1})$$

The real stock return (RSR) at time t is obtained by subtracting inflation from the nominal return:

$$RSR_t = NSR_t - inf_t$$

where inflation is measured as the log difference of the CPI:

$$inf_t = \log(CPI_t / CPI_{t-1})$$

These definitions are fully consistent with the macroeconomic and financial literature and with the variables used in previous international studies.

5. METHODOLOGY: Structural VAR with Sign Restrictions (SVAR)

To identify and measure the dynamic effects of monetary policy shocks on ISX stock returns, the study adopts a structural vector autoregression (SVAR) model with sign restrictions, following Uhlig (2005) and Ume (2018). The procedure consists of: (i) estimating a reduced-form VAR for the set of endogenous variables; (ii) imposing theory-based sign restrictions on the impulse response functions of selected variables to identify monetary policy shocks; and (iii) tracing the dynamic responses of nominal and real stock returns to the identified shocks across the three monetary regimes. The general SVAR(p) model for k endogenous variables can be written as:

$$A_0 y_t = A_1 y_{t-1} + \dots + A_p y_{t-p} + e_t$$

where y_t is the vector of endogenous variables, A_0 is the contemporaneous impact matrix, A_i ($i = 1,\dots,p$) are coefficient matrices, and e_t is the vector of structural shocks.

Identifying A_0 requires additional information. Instead of relying on recursive (Cholesky) identification, which imposes a particular ordering on the variables, the study imposes sign restrictions that are consistent with macroeconomic theory. For a contractionary monetary policy shock, the following signs are imposed: the policy interest rate rises (≥0), output declines (≤0), prices decline (≤0), reserves decline (≤0), and unemployment rises (≥0). These restrictions define a set of admissible impulse responses without pinning down a single unique solution, which is the essence of the sign-restriction approach. Additional restrictions can be added to narrow the set, but at the cost of stronger assumptions. The study estimates six SVAR models: three for nominal returns (under restrictive, accommodative and output-targeting regimes) and three for real returns under the same regimes. Lag length is selected using standard information criteria (AIC, SC, HQ), and unit-root and stability tests (ADF/PP, VAR stability condition, and LM tests for serial correlation) are conducted to ensure the appropriateness of the specifications, as reported in the original appendices.

6. EMPIRICAL RESULTS AND DISCUSSION

6.1 Nominal Return of the ISX General Index

• Contractionary monetary policy shock (Model 1): The shock reduces the nominal return two to three months after the shock before the return converges back to baseline after about three months. The maximum decline is about 0.43%, and roughly 5% of the nominal return is explained by the policy rate two months after the shock, while around 3% is explained by changes in the money supply. Other variables exhibit weak and fading responses. This is consistent with the behavior shown in Figure (1) and Table (2).

• Expansionary monetary policy shock (Model 2): A positive monetary policy shock increases the nominal return after about 1.5 months, peaking at around 2.03% after five and a half months, before gradually returning to baseline. The forecast error variance decomposition (Table 3) shows that the policy rate explains about 16% of the variation, and together with economic growth it explains about 31% of the nominal return over the ten periods. This aligns with the findings of Laopodis (2013) on the slow mean reversion of returns following monetary expansions.

• Output-targeting monetary policy (Model 3): The effect on nominal returns is very small (about 0.03% by the end of the first month); it reaches a modest peak after four months and then fades out after seven months. FEVD results (Table 4) indicate that the policy rate remains the single most important explanatory variable (up to 32%), followed by money supply (about 3%). The overall conclusion is that the nominal return is most responsive under restrictive and expansionary regimes, and least responsive under output-targeting, reflecting the structural weakness of the Iraqi stock market.

6.2 Real Return of the ISX General Index

• Contractionary monetary policy shock (Model 1): The real return shows an almost zero reaction to a tightening shock; responses remain near zero and only slightly negative up to the seventh month. The FEVD results in Table (5) confirm that neither the policy rate nor the other macroeconomic variables provide meaningful explanatory power for the real return. This reflects the fact that inflation offsets most of the nominal effects of monetary policy in the Iraqi context.

• Expansionary monetary policy shock (Model 2): A positive monetary shock initially reduces the real return after about one month, reaching its minimum (about –0.40) after five months before converging to baseline. Around 28% of the variation is explained by the policy rate and 24% by economic growth, so together they account for about 52% of the real return variation over ten periods (Table 6). Nevertheless, the magnitude of the response remains modest and short-lived.

• Output-targeting monetary policy (Model 3): The positive effect on the real return is modest (0.04) after the first month, peaks in the second month, and disappears after four months, after which the response turns slightly negative. FEVD results in Table (7) show that no single macroeconomic variable provides a strong explanation, with total explained variance remaining at 3–4%. This is fully consistent with the near-zero responses reported in the original Arabic text.

6.3 Factors Weakening the Transmission of Monetary Policy to Stock Returns

The study identifies a set of structural and institutional factors that weaken or even mute the effect of monetary policy shocks on ISX stock returns, including:

1. The narrow and illiquid nature of the Iraqi stock market, which reduces the sensitivity of prices to macroeconomic news.
2. The limited depth and efficiency of the banking system, which constrains the credit and liquidity channels of monetary policy.
3. The presence of external and financial sanctions and political uncertainty, which can dominate domestic monetary signals.
4. The reliance of many listed firms on non-market funding sources, which dilutes the impact of interest rate changes on their valuations.
5. The relatively low level of financial literacy and the predominance of individual investors, which amplifies behavioral responses and short-termism.

These factors help explain why contractionary monetary policy does not produce a pronounced or persistent fall in real returns, and why accommodative policies produce only modest and short-lived positive effects.

7. CONCLUSION

This study analyzed the relationship between monetary policy and the return of the ISX general index for the period 2004–

2024 using a structural VAR framework with sign restrictions. The main results can be summarized as follows:

1. Contractionary monetary policy shocks exert a clear negative effect on the nominal return of the ISX general index during restrictive monetary periods, with the maximum effect materializing within two to three months.
2. The real return, however, responds very weakly – often not at all – to contractionary shocks, indicating that inflation dynamics and market structure absorb much of the policy impact.
3. During accommodative and output-targeting periods, the stock market shows only a weak positive response in nominal terms and an even weaker or negative response in real terms, confirming that the transmission mechanism from monetary policy to the stock market in Iraq is incomplete.
4. When the same relationship is re-estimated using a recursive (Cholesky) identification scheme, the results remain broadly consistent with the sign-restriction approach, although the magnitudes become larger, which underscores the importance of identification choices in SVAR analysis.
5. Policymakers should therefore not assume a strong or automatic stock-market channel for monetary policy in Iraq; instead, they may need to complement monetary actions with measures that deepen the stock market, improve liquidity, and enhance investor confidence.

8. RECOMMENDATIONS

Based on the findings, the study recommends the following:

- Enhancing the depth and liquidity of the Iraq Stock Exchange through broader listings, market-making mechanisms, and the introduction of new financial instruments.
- Strengthening coordination between monetary policy and financial market policy so that changes in policy rates are transmitted more effectively to asset prices.
- Improving disclosure, corporate governance and investor education to reduce behavioral biases and increase the responsiveness of prices to macroeconomic signals.
- Periodically reassessing the monetary policy rule and the transmission mechanism in light of structural changes in the Iraqi economy and global financial conditions.
- Expanding empirical work to sectorial stock indices to capture heterogeneous responses across banking, industry, services and telecom firms.

Figure (1): Response of the Nominal Return of the General Index of the Iraq Stock Exchange to the Policy Interest Rate and Macroeconomic Variables – Model 1

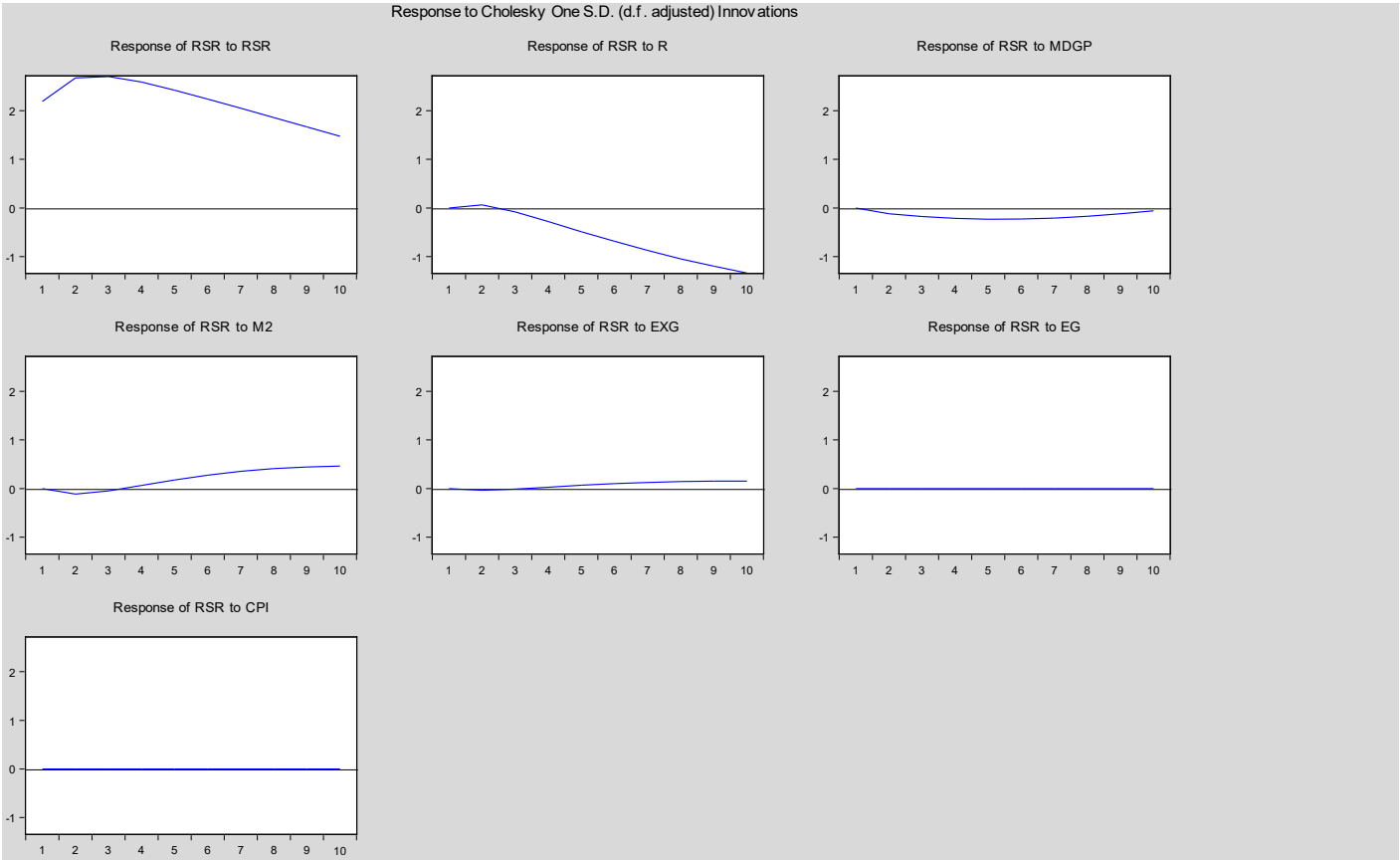

Figure (2): Response of the Nominal Return to an Expansionary Monetary Policy Shock – Model 2

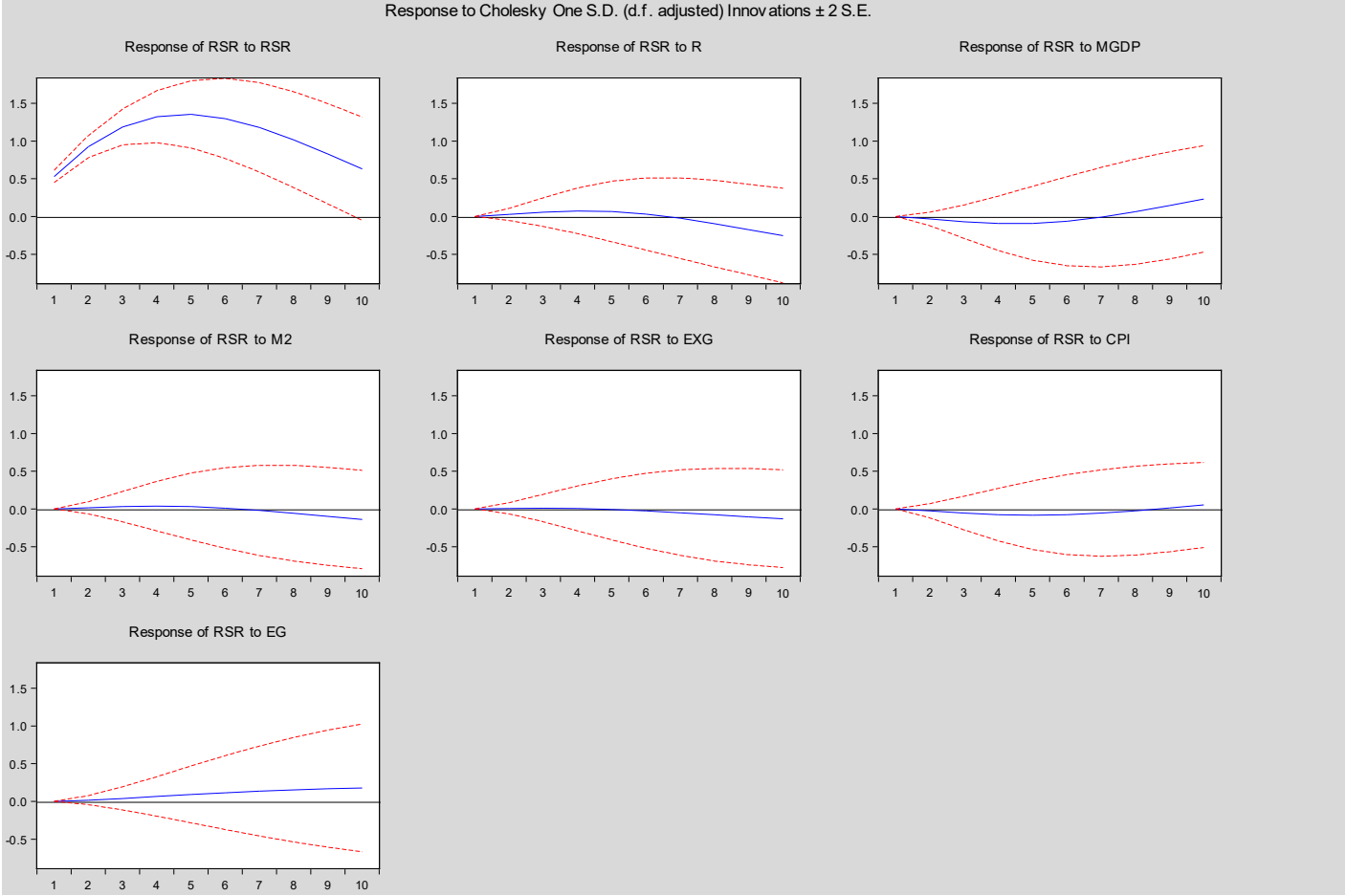

Figure (3): Response of the Nominal Return under Output-Targeting Monetary Policy – Model 3

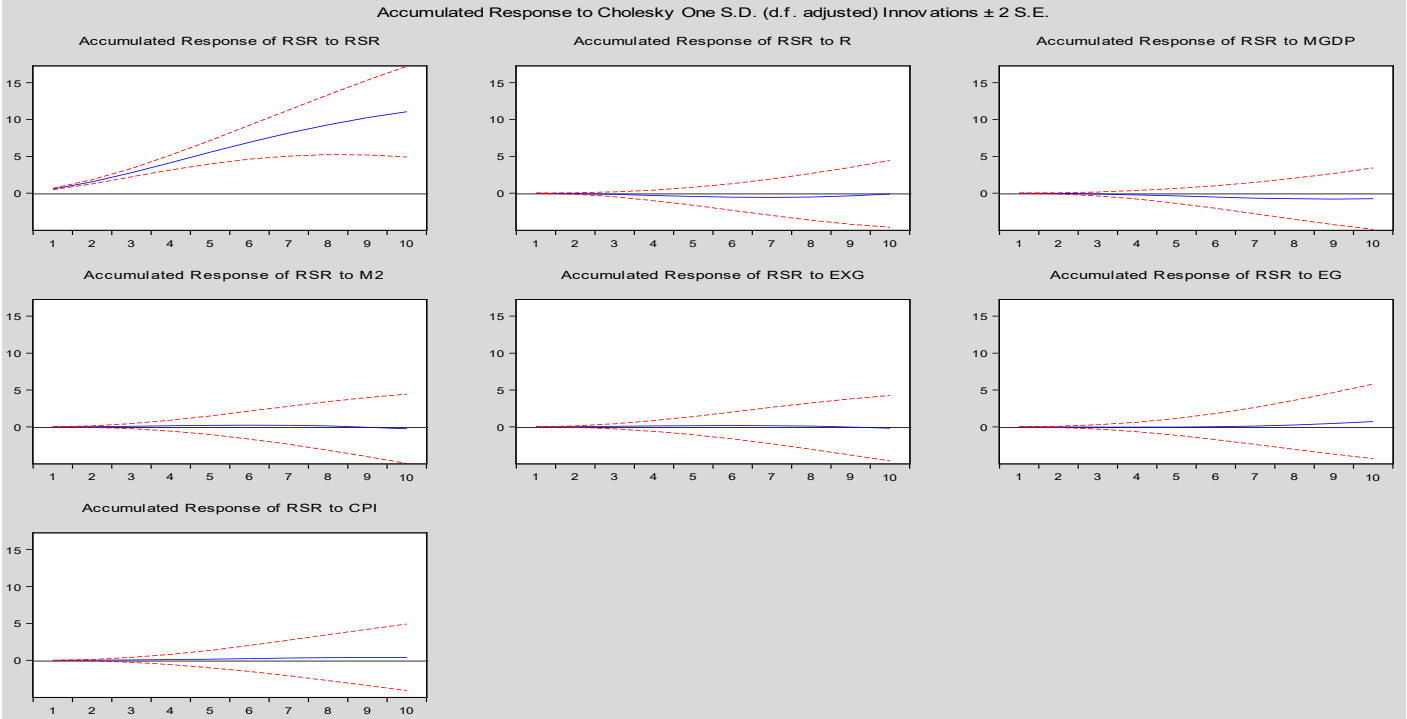

Table (2): Forecast Error Variance Decomposition (FEVD) for the Nominal Return of the General Index – Model 1

Period	S.E.	RSR	R	MGDP	M2	EXG	CPI	EG
1	0.531267	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
		(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)
2	1.069265	99.73765	0.069909	0.090102	5.021284	0.005058	1.054453	3.021547
		(0.62900)	(0.26226)	(0.24050)	(0.27528)	(0.19234)	(0.33843)	(0.09802)
3	1.601311	99.34634	0.465016	1.224867	3.047387	0.007447	0.139018	0.069925
		(1.76913)	(0.78836)	(0.67182)	(0.79931)	(0.60923)	(0.98956)	(0.30124)
4	2.082915	99.02911	0.223625	3.326204	0.060778	0.005634	0.213657	0.140996
		(3.08455)	(1.44510)	(1.15627)	(1.39372)	(1.18380)	(1.76953)	(0.60039)
5	2.489497	98.85534	0.226534	5.359924	5.058356	0.004428	0.260675	0.234746
		(4.45168)	(2.14512)	(1.62847)	(1.96289)	(1.86715)	(2.55591)	(1.01483)
6	2.811951	98.78981	0.190927	0.330765	2.047478	0.011472	0.276161	0.353391
		(5.84619)	(2.83564)	(2.06788)	(2.47320)	(2.60052)	(3.26273)	(1.56507)
7	3.053236	98.70519	0.167592	0.281437	8.044098	0.035832	0.265974	0.499881
		(7.25542)	(3.49766)	(2.48734)	(2.93263)	(3.30951)	(3.83204)	(2.25723)
8	3.225127	98.39637	0.235770	0.290154	6.070830	0.087198	0.243602	0.676079
		(8.64164)	(4.15278)	(2.93065)	(3.36886)	(3.92567)	(4.23143)	(3.07374)
9	3.344841	97.61272	0.489950	0.460576	4.153137	0.174841	0.228238	0.880543
		(9.95782)	(4.85463)	(3.46349)	(3.80432)	(4.41886)	(4.45683)	(3.96976)
10	3.431547	96.12065	1.014518	0.898387	0.312518	0.305908	0.241539	1.106477
		(11.1596)	(5.63489)	(4.13329)	(4.23491)	(4.81349)	(4.53676)	(4.87934)

Cholesky Ordering: RSR R MGDP M2 EXG CPI EG
Standard Errors: Monte Carlo (100 repetitions)

Table (3): Forecast Error Variance Decomposition (FEVD) for the Nominal Return of the General Index – Model 2

Period	S.E.	RSR	R	MDGP	M2	EXG	EG	CPI
1	2.189526	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	3.460595	99.73271	0.033185	0.116339	0.107002	0.010759	1.20E-06	1.84E-06
3	4.395569	99.63580	0.054068	0.225026	0.077697	0.007403	1.61E-06	2.20E-06
4	5.112589	99.24273	0.338476	0.335962	0.074213	0.008612	1.94E-06	2.26E-06
5	5.685832	98.37948	0.005787	0.435008	0.158462	0.021258	2.21E-06	2.20E-06
6	6.160446	97.01565	0.097006	0.507333	0.334943	0.045059	2.44E-06	2.08E-06
7	6.564748	95.18068	1.612754	0.545680	0.584033	0.076849	2.58E-06	1.93E-06
8	6.917360	92.93177	3.527938	0.550889	0.876867	0.112531	2.65E-06	1.78E-06
9	7.231093	90.34020	2.798651	0.530529	1.182587	0.148023	2.64E-06	1.63E-06
10	7.515080	87.48403	10.36676	0.496802	1.472600	0.179804	2.56E-06	1.51E-06

Cholesky Ordering: RSR R MDGP M2 EXG EG CPI

Table (4): Forecast Error Variance Decomposition (FEVD) for the Nominal Return of the General Index – Model 3

Variance Decomposition of RSR:					
Period	S.E.	RSR	R	MDGP	M2
1	2.189526	100.0000	0.000000	0.000000	0.000000
2	3.460595	99.73271	0.033185	0.116339	0.107002
3	4.395569	99.63580	0.054068	0.225026	0.077697
4	5.112589	99.24273	0.338476	0.335962	0.074213
5	5.685832	98.37948	1.005787	0.435008	0.158462
6	6.160446	97.01565	2.097006	0.507333	0.334943
7	6.564748	95.18068	3.612754	0.545680	0.584033
8	6.917360	92.93177	5.527938	0.550889	0.876867
9	7.231093	90.34020	7.798651	0.530529	1.182587
10	7.515080	87.48403	10.36676	0.496802	1.472600

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