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Analyzing the Impact of a Contractionary Monetary Shock on the Cash Flow Dynamics of Institutional Sectors in Iran: Households, Non-Financial Corporations, and Banks

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Shahid Chamran University of Ahvaz
Quarterly Journal of Quantitative Economics
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EXTENDED ABSTRACT

Introduction

The flow of funds accounts illustrate financial transactions and the circulation of capital among different institutional sectors of the economy. These accounts serve as a fundamental informational tool in empirical research and are especially valuable in analyzing the effects of monetary and fiscal shocks on these sectors. A clear understanding of how such shocks influence the financial behavior of institutional units can guide effective policy decisions affecting broader macroeconomic variables. This study analyzes the effects of a contractionary monetary shock on changes in financial assets, financial liabilities, and net financial investment of three institutional sectors in Iran: households, non-financial corporations, and banks. Net financial investment is defined as the difference between financial assets and financial liabilities.

The contractionary monetary shock is interpreted as an increase in the required reserve ratio.

In the realm of monetary policy, the reserve requirement ratio is a key indirect instrument implemented by monetary authorities to regulate banking activities. Changes in this ratio directly affect the credit behavior of financial institutions, which in turn influence the financial actions of non-financial firms and households. Over the past two decades, Iran has experienced persistent inflationary pressures, rapid liquidity expansion, heightened speculative activity in financial and real asset markets, and an increasing need to mobilize private sector savings to fund investments through the banking system. These developments have made contractionary monetary policy interventions increasingly necessary.

Methodology:
The study employs a Factor-Augmented Vector Autoregression (FAVAR) model using annual data spanning from 1973 to 2017 (1352–1396 in the Iranian calendar). Traditional VAR models are limited in their ability to incorporate a large number of variables due to rapid loss of degrees of freedom, forcing researchers to choose among variables and potentially ignore valuable information. The FAVAR model, introduced by Bernanke et al. (2005), resolves this issue by summarizing information from numerous time series into one or more latent factors, which are then incorporated into the VAR framework.

Findings:
Impulse response functions indicate that a contractionary monetary shock caused by an increase in the reserve requirement ratio leads to a reduction in both financial assets and financial liabilities across households, non-financial firms, and banks. Net financial investment rises for banks and non-financial firms in the first year following the shock, suggesting that liabilities decline more than assets. In contrast, households exhibit a decrease in net financial investment in the first year, due to a sharper decline in financial assets compared to liabilities.

Conclusion:
The contractionary monetary shock suppresses production activity in firms and reduces household income, leading to a drop in household savings—

Shahid Chamran University of Ahvaz
Quarterly Journal of Quantitative Economics
(former Economic Studies)

particularly in the form of bank deposits—and thus reducing household financial assets. Furthermore, the increase in the reserve requirement ratio results in more funds being held at the central bank, diminishing the money multiplier and slowing monetary expansion. The consequent reduction in household deposits weakens banks' lending capacities and reduces the issuance of new household debt due to a tighter credit supply.

References

Abu Nouri, I., Sajjadi, S., & Mohammadi, T. (2013). The Relationship between Inflation Rate and Interest Rate of Bank Deposits in Iran's Banking System. *Quarterly Journal of Financial and Economic Policies*, 3, 23-52. [in Persian]

Akrami, A., & Mehdizadeh, S. (2004). Considerations on Bank Interest Rates in Iran. *Rond Magazine*, 42, 20-46. [in Persian]

Bai, J., & Ng, S. (2003). Determining the Number of Factors in Approximate Factor Models. *Econometrica*, 70(1), 191-221.

Bernanke, B., & Blinder, A. S. (1992). The Federal Funds Rate and the Channels of Monetary Transmission. *American Economic Review*, 82(4), 901-921.

Bernanke, B., & Gertler, M. (1989). Agency Costs, Net Worth and Business Fluctuations. *American Economic Review*, 79(1), 14-31.

Bernanke, B., & Gertler, M. (1995). Inside the Black Box: The Credit Channel of Monetary Policy Transmission. *Journal of Economic Perspectives*, 9(4), 27-48.

Bernanke, B., Gertler, M., & Gilchrist, S. (1999). *The financial accelerator in a quantitative business cycle framework*. In J. B. Taylor & M. Woodford (Eds.), Handbook of Macroeconomics, 1341-1393. Elsevier.

Boivin, J., & Giannoni, M. P. (2005). *DSGE Models in a Data-Rich Environment*. Columbia University.

Bonci, R. (2012). *The Effects of Monetary Policy in the Euro Area: First Results from the Flow of Funds*. In R. Bonci & A. F. Pozzolo (Eds.), The Financial Systems of Industrial Countries: Evidence from Financial Accounts, 217-245, European Central Bank.

Bonci, R., & Columba, F. (2008). Monetary policy effects: New evidence from the Italian flow-of-funds. *Applied Economics*, 40(14), 1803-1818.

Breitung, J., & Eickmeier, S. (2005). Dynamic factor model. Deutsche *Bundesbank Discussion Paper*, 38.

Christiano, L., Eichenbaum, M., & Evan, C. (1996). The Effects of Monetary Policy Shocks: Evidence from the Flow of Funds. *The Review of Economics and Statistics*, 78(1), 16-34.

Christiano, L., Motto, R., & Rostagno, M. (2010). Financial factors in economic fluctuations. *European Central Bank Working Paper Series*, 1192.

Dib, A. (2010). Banks, Credit Market Friction, and Business Cycles. *Bank of Canada Working Paper*, 2010-9.

Ebrahimi, M., & Vaez, M. (2022). *Dynamic effects of contractionary monetary policy on institutional sectors: Evidence from Iran's flow of funds.* Economic Modelling, 105, 105678. [in Persian]

Ebrahimi, S., Sadeghi, S., Beheshti, M., & ranjpoor, R. (2018). Assessing the effect of government infrastructure expenditure on income distribution in rural Iran: FAVAR Model. *Agricultural Economics Research*, *10*(40), 145-172. https://jae.marvdasht.iau.ir/article_3221.html?lang=en [in Persian]

Gameiro, I., & Sousa, J. (2010). Monetary Policy Effects on the Flow of Funds of Nonfinancial Corporations and Households in Portugal. Economic Bulletin, *Banco de Portugal*, 37-48.

Gerali, A., Neri, S., Sessa, L., & Signoretti, F. M. (2010). Credit and banking in a DSGE model of the Euro area. *Journal of Money, Credit and Banking*, *42*(6), 107-141.

Gertler, M., & Gilchrist, S. (1993). The Role of Credit Market Imperfections in the Monetary Transmission Mechanism: Arguments and Evidence. *Scandinavian Journal of Economics, 95*(1), 43-60.

Gholibegloo, M. R. (2011). A Study of the Effectiveness of Monetary Policy on Legal Reserve Ratio and Evaluation of the Effects of Its Balance Sheets in the Banking Network. *Quarterly Journal of Economic Research, 59*, 59-94. [in Persian]

Heydari, H., & Mollabahrami, A. (2016). The effect of credit shocks on the dynamics of major financial and macroeconomic variables in Iran in the form of a DSGE model. *Quarterly Journal of Economic Research and Policy, 40*, 185-199. [in Persian]

Heydari, H. (2018). Constructing a Factor Augmented VAR Model to Analyze Transmission of Oil and Monetary Shocks to Iranian Economy. Journal of Economic Modeling Research, 34, 71-106. https://jemr.khu.ac.ir/browse.php?a_id=1596&sid=1&slc_lang=en [in Persian]

Heydari, H., Khalilzadeh, J., & Faizi, S. (2020). Investigating the Challenges of Corporate Financing with Emphasis on the Role of Monetary Policy and Banking Credit: A Stochastic Dynamic General Equilibrium Model Approach. *Quarterly Journal of Applied Economic Theories, 4*, 61-90. [in Persian]

Jannsen, N., Potjagailo, G., & Wolters, M. H. (2019). Monetary Policy During Financial Crises: Is the Transmission Mechanism Impaired? *International Journal of Central Banking, 15*(1), 81-126.

Kaiser, H. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement, 20*(1), 141-151.

Khosravi, A., & Safari, H. (2023). Empirical analysis of monetary shocks' impact on macroeconomic variables in Iran using DSGE models. *Journal of Quantitative Economics (JQE), 20*(1), 24. https://doi.org/10.22055/jqe.2023.41234.2412. [in Persian]

Kilian, L., & Lutkepohl, H. (2017). *Structural Vector Autoregressive Analysis*. Cambridge University Press.

Kiyotaki, N., & Moore, J. (1997). Credit cycles. *Journal of Political Economy, 105*(2), 211-248.

Mishkin, F. S. (1978). The household balance sheet and the great depression. *Journal of Economic History*, 38(4), 918-937.

Mishkin, F. S. (1995). Symposium on the Monetary Transmission Mechanism. Journal of Economic Perspectives, 9(4), 3-10.

Mishkin, F. S. (1996). The channel of monetary transmission: Lessons for monetary policy. *NBER Working Paper Series*, 5464.

Narayan, A., Jayadev, A., & Mason, J. W. (2017). Mapping India's Finances: 60 Years of Flow of Funds. *Economic and Political Weekly*, 52(1), 49-56.

Peersman, G. (2011). Bank Lending Shocks and the Euro Area Business Cycle. Ghent University Faculty of Economics and Business *Administration Working Paper*, 11.

Raie, R., Irvani, J., & Ahmadi, T. (2018). Monetary Shocks and Monetary Policy Transmission Channels in the Iranian Economy: With Emphasis on the Exchange Rate Channel, Housing Prices and Credits. *Economic Growth and Development Research*, 3(1), 1-20.

Rafee Shamsabadi, P. , Haji, G. , Fakhrehoseyni, S. F. and Sargolzayi, M. (2018). Significance of financial accelerators in a New Keynesian model in Iranian economy. *Journal of Applied Economics Studies in Iran*, *7*(28), 215-249. doi: 10.22084/aes.2018.15787.2608 [in Persian].

Raei, R. , Iravani, M. J. and ahmadi, T. (2018). Monetary Shocks and Monetary Transmission Mechanism in The Iranian Economy: With Emphasis on Exchange Rates, Housing Prices and Credits. *Economic Growth and Development Research*, *8*(31), 29-44. https://egdr.journals.pnu.ac.ir/article_4342.html?lang=en [in Persian].

Anvari, E. , Moradi, P. & Arman, S. A. (2024). The Effect of cross-over effect of positive and negative monetary regimes on the incomplete and asymmetric Degree of Exchange Rate Pass-Through with: NARDL and Markov-switching Method. *Quarterly Journal of Quantitative Economics (JQE), 21*(2), 127-159. doi: 10.22055/jqe.2021.36717.2351[in Persian].

Reserve Bank of India (RBI). (2016). Flow of Funds Accounts of the Indian Economy: 2015-16. RBI Bulletin, 23-33.

Ruslan, A., Dana, H., & Ivana, K. (2015). The impact of monetary policy on financing of Czech firms. *Journal of Economics and Finance*, *65*, 455-476.

Shabbir, S. (2012). Balance sheet channel of monetary transmission in Pakistan: An empirical investigation. *SBP Research Bulletin*, 8(1), 1-12.

Shadrokh, M. (2012). Evaluating the policy of increasing bank interest rates: Useful but late. *Quarterly Journal of Economic News*, 35, 60-61.

Shahhosseini, & Bahrami, J. (2016). Macroeconomic Fluctuations and Money Transfer Mechanism in Iran (DSGE Model Approach). *Economic Research Journal, 16*(1), 1-49. [in Persian]

Singh, T. (2019). On the flow of funds accounts and inter-sectoral mobility of capital in India. *Applied Economics, 51*(1), 1-15.

Taghavi, M., & Lotfi, A. A. (2016). The effects of monetary policy on the volume of deposits, lending facilities and liquidity of the banking system. *Economic Research Journal*, *20*(1), 130-165. [in Persian]

Tunc, C., & Kilinc, M. (2019). The Asymmetric Effects of Monetary Policy on Economic Activity in Turkey. S*tructural Change and Economic Development, 51*, 505-528.

Walsh, C. (2010). *Monetary Theory and Policy* (3rd ed.). MIT Press.