

The Formation of Price Bubbles in the Stock, Currency, and Oil Markets and Their Impact on Iranian Business Cycles

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Abstract

This study investigates the impact of price bubbles in Tehran's stock market, foreign exchange market, and oil market on the boom and recession cycles of Iran's economy. Using quarterly data from Spring 2008 to Spring 2024, price bubbles in these financial markets were identified via the Generalized Supremum Augmented Dickey-Fuller (GSADF) test, while business cycles were extracted using the Hodrick-Prescott (HP) filter. The influence of these bubbles on Iran's business cycles was then analyzed through Markov-Switching Regression. The results from the estimated models indicate that fluctuations in gross fixed capital formation, inflation rate, and financial crises exert negative effects on business cycles, whereas labor force fluctuations have a positive effect. A key finding is that price bubbles in the stock, currency, and oil markets exert an asymmetric effect: they have a positive impact during recessionary periods, thereby exacerbating economic downturns, and a negative impact during boom periods, consequently curtailing economic growth.

Keywords: Business Cycles; Price Bubbles; Financial Crises; GSADF Test; Hodrick-Prescott Filter; Markov-Switching Approach.

JEL Classification: E32, C22, C24, G01.

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Bibliography

- Abonouri, Abbas Ali and Kianpish, Azadeh. "The impact of oil price volatility on the financial markets in Iran." *Iranian Energy Journal* 19, no. 3 (2016). <http://necjournals.ir/article-1-908-fa.html> [In Persian]
- Aigheysi, Oziengbe Scott. "Oil price volatility and business cycles in Nigeria." *Studies in Business and Economics* 13, no. 2 (2018): 31-40. [10.2478/sbe-2018-0018](https://doi.org/10.2478/sbe-2018-0018)
- Baharvand, Nahid et al., "Investigating the Effects of Oil Price and Income Shocks on Business Cycles in the Iranian Economy" Master's Thesis, Vali-Asr University (AJ), 2017. [In Persian]
- Baharvand, Nahid, Vahid Farzam, and Younes Nademi. "Effect of Oil Shocks on Business Cycle in the Iran's Economic Using the Markov-Switching model (1988: 2-2014: 4)." *The Journal of Economic Studies and Policies* 9, no. 1 (2018): 3-22. [In Persian]
- Bel Hadj, Tarek, and Adel Ghodbane. "Do Natural Resources Rents and Institutional Development Matter for Financial Development under Quantile Regression Approach?" *Resources Policy* 73, no. 6 (2021): 102169.
- Bernanke, Ben S., Carol C. Bertaut, Laurie Demarco, and Steven B. Kamin. "International capital flows and the return to safe assets in the united states, 2003-2007." *FRB International Finance Discussion Paper* 1014 (2011): 2003-2007. <https://www.federalreserve.gov/pubs/ifdp/2011/1014/ifdp1014.htm>.
- Burns, Arthur F., and Wesley C. Mitchell. *Measuring Business Cycles*. New York: National Bureau of Economic Research, 1946.
- Caballero, Ricardo J., and Arvind Krishnamurthy. "Global imbalances and financial fragility." *American Economic Review* 99, no. 2 (2009): 584-588. <https://www.jstor.org/stable/25592462>.
- Central Bank of the Islamic Republic of Iran. <https://www.cbi.ir> [In Persian]
- Chkili, Walid. "The links between gold, oil prices and Islamic stock markets in a regime switching environment." *Eurasian Economic Review* 12, no. 1 (2022): 169-186. <https://doi.org/10.1007/s40822-022-00202-y>.
- De Vito, Antonio, and Juan-Pedro Gómez. "Estimating the COVID-19 Cash Crunch: Global Evidence and Policy." *Journal of Accounting and Public Policy* 39, no. 2 (2020): 106741. <https://doi.org/10.1016/j.jaccpubpol.2020.106741>.
- Dornbusch, Rudiger, and Stanley Fischer. "Exchange rates and the current

- account.” *The American economic review* 70, no. 5 (1980): 960-971.
- Economic and Financial Data Bank. <https://databank.mefa.ir> [In Persian]
- Enders, Walter, and C. W. J. Granger. “Unit Root Tests and Asymmetric Adjustment with an Example Using the Term Structure of Interest Rates.” *Journal of Business and Economic Statistics* 16 (2004): 304-311.
- Ezzati Shorgoli, Ahmad, Aram Mohammadi, Sara Masoomzadeh, and Mehdi Mohammadi. “Investigating the Existence of a Rational Bubble in the Iranian Currency Market with an Emphasis on the Fundamental Variables of the Exchange Rate.” *Financial and Economic Policies* 11, no. 44 (2024): 53-83. [In Persian]
- Fama, Eugene F. “The behavior of stock-market prices.” *The journal of Business* 38, no. 1 (1965): 34-105. <http://www.jstor.org/stable/2350752>.
- Gök, Remzi. “Does Contagion Effect of Bubbles and Causality Exist Among Bitcoin, Gold, and Oil Markets?” In *Global risk and contingency management research in times of crisis*, 53-75. IGI Global Scientific Publishing, 2022.
- Goldfeld, Stephen M., and Richard E. Quandt. “A Markov model for switching regressions.” *Journal of econometrics* 1, no. 1 (1973): 3-15. [https://doi.org/10.1016/0304-4076\(73\)90002-X](https://doi.org/10.1016/0304-4076(73)90002-X)
- Goldfeld, Stephen M., Richard E. Quandt, and Dennis E. Smallwood. *Nonlinear methods in econometrics*. Amsterdam: North-Holland, 1972.
- Gupta, Rangan, Joshua Nielsen, and Christian Pierdzioch. “Stock market bubbles and the realized volatility of oil price returns.” *Energy Economics* 132 (2024): 107432. <https://doi.org/10.1016/j.eneco.2024.107432>
- Hamilton, James D. “A New Approach to the Economic Analysis of Nonstationary Time Series and the Business Cycle.” *Econometrica* 2, no. 57 (1989): 357-384. <https://doi.org/10.2307/1912559>
- Hamilton, James D. “Causes and Consequences of the Oil Shock of 2007-08.” *Brookings Papers on Economic Activity* 1, no. 40 (2009): 215-261.
- Harding, Don, and Adrian Pagan. “A Suggested Framework for Classifying the Modes of Cycle Research.” *Journal of Applied Econometrics* 20, no. 2 (2005): 151-159.
- Higgins, Matthew, and Frank Ofori-Acheampong. “A Markov Regime-Switching Model with Time-Varying Transition Probabilities for Identifying Asset Price Bubbles.” *International Journal of Economics and Finance* 10, no. 4 (2018): 1-14.
- Hosseinzadeh, Hedayat. Identification of Multiple Bubbles in Tehran Stock

- Exchange Using Right-Tailed Markov Switching Unit Root Test.” *New Economy and Trad* 15, no. 4 (2021): 29-50. [In Persian]
- Houshmandi, Saman, Seyed Shams-eddin Hosseini, Abbas Memarnejad, and Farhad Ghaffari. “The Effect of Exchange Fluctuations on the Petroleum Products Stock Index by using MS-VAR.” *Monetary & Financial Economics* 28 (2022): 153-177. [10.22067/mfe.2022.71498.1097](https://doi.org/10.22067/mfe.2022.71498.1097) [In Persian]
- Izadi, Maryam et al. “The Formation of Bubble Price in the Stock Market and Its effect on the Iran Business Cycles.” *Quarterly Journal of Quantitative Economics* 20, no. 2 (2023): 72-99. <https://doi.org/10.22055/qje.2021.37190.2371> [In Persian]
- J. M Keynes. “The General Theory of Employment Terest and Money.” *Macmillan and Company*. <https://doi.org/10.2307/2549064>.
- Kilian, Lutz, and Xiaoqing Zhou. “Oil price shocks and inflation.” *Economics* (2025): 420-438. <https://doi.org/10.4337/9781035327768.00032>
- Kindleberger, Charles P., and Robert Z. Aliber. *Manias, Panics and Crashes: A History of Financial Crises*. 6th edition. New York: Palgrave Macmillan, 2011.
- Kwon, Ji Ho. “Tail behavior of Bitcoin, the dollar, gold and the stock market index.” *Journal of International Financial Markets, Institutions and Money* 67 (2020): 1-14. <https://doi.org/10.1016/j.intfin.2020.101202>
- Kydland, Finn E., and Edward E. Prescott. “Business cycles: real facts and a monetary myth.” *Federal Reserve Bank of Minneapolis Quartely Review*, no. 14 (1990): 3-18.
- Levitin, Adam J., and Susan M. Wachter. “Explaining the housing bubble.” *Georgetown Law Journal* 100, no. 4 (April 2012): 1177-1258. <http://ssrn.com/abstract=1669401>.
- Lin, Tin-Chun. “The role of higher education in economic development: An empirical study of Taiwan case.” *Journal of Asian Economics* 15, no. 2 (2004): 355-371.
- Lucas Jr, Robert E. “Understanding business cycles.” In *Essential readings in economics*, 306-327. London: Macmillan Education UK, 1995.
- Male, Rachel. “Developing country business cycles: Characterizing the cycle.” *Emerging Markets Finance and Trade* 2, no. 47 (2011): 20-39.
- McDermott, C. John, and Alsdair Scott. “Concordance in business cycles.” *Reserve Bank of New Zealand, Working Paper*, no. G99/7 (1999).
- Mehrghan, Nader, and Younes Salmani, “Oil Price Volatility and Sustainable

- Economic Growth: a Case Study of Iran and Japan.” *Journal of Applied Economics Studies in Iran* 3, no. 10 (2014): 107-125. [In Persian]
- Minsky, Hyman P. *Stabilizing an Unstable Economy*. New Haven: Yale University Press, 1986.
- Nademi, Younes and Ramin Khochiani. “Co-Movement of Stock, Currency and Gold Markets in Iran: An Econophysical Analysis.” *Financial Engineering and Securities Management* 8, no. 31 (2017), 149-166. [In Persian]
- Nademi, Younes, and Nahid Baharvand. “Modeling the Effective Factors on Economic Growth in Iran: Markov Switching GARCH Approach.” *Quarterly Journal of Financial and Economic Policies* 6, no. 24, (2018): 33-58. [In Persian]
- Neves, Elisabete, Vítor Oliveira, Joana Leite, and Carla Henriques. “The global business cycle and speculative demand for crude oil.” *China Finance Review International* 11, no. 4 (2021): 502-521. <https://doi.org/10.1108/CFRI-05-2021-0091>
- Özdemir, Onur. “Cue the Volatility Spillover in the Cryptocurrency Markets during the COVID-19 Pandemic: Evidence from DCC-GARCH and Wavelet Analysis.” *Financial Innovation* 8, no. 1 (2022): 1-38. [10.1186/s40854-021-00319-0](https://doi.org/10.1186/s40854-021-00319-0).
- Phillips, Peter C. B., Shu-Ping Shi, and Jun Yu. “Testing for Multiple Bubbles: Historical Episodes of Exuberance and Collapse in the S&P 500.” *International Economic Review* 56, no. 4 (2015): 1043-1078.
- Qu, Zhengxu. “A Review about the Business Cycle and Stock Market.” *Proceedings of the 8th International Conference on Economic Management and Green Development* 124, no. 1 (2024): 234-238. [10.54254/2754-1169/124/2024.17720](https://doi.org/10.54254/2754-1169/124/2024.17720).
- Qureshi, Irfan A., and Ghufran Ahmad. “Oil price shocks and US business cycles.” *Journal of Economic Dynamics and Control* 177 (2025): 1-40. <https://doi.org/10.1016/j.jedc.2025.105132>.
- Rahmanifar, Mehrdad, Marjan Damankeshideh, Manijeh Hadinejad Darsara, and Ebrahim Abbasi. “Investigating the effects of oil, gold and currency exchange rate on the country's business cycles in recession and boom regimes using a rotational model and changing the Markov switching regime.” *The Journal of Economic Studies and Policies* 8, no. 2 (2021): 226-251. <https://doi.org/10.22096/esp.2022.136173.1410> [In Persian]
- Rudari, Soheil, Abolfazl Shahabadi, and Leila Argha. “The Role of Recession and Boom in the Impact of Oil Resource Rents on Financial Development

Index in Iran: Is the Institutional Quality a Matter?" *Financial Management Strategy* 11, no. 1 (2023): 77-100. [In Persian]

Rudari, Soheil, Ehsan Namazizadeh, Farzaneh Ahmadian Yazdi, and Hamidreza Maghsoudi. "The New Keynesian Phillips Curve and the Degree of Exchange Rate Passage in the Iranian Economy: New Evidence from the MCWT Model." *New Economy and Trad* 19, no. 63 (2024): 99-131. [In Persian]

Shiller, Robert J. *Irrational Exuberance*. Princeton, NJ: Princeton University Press, 2000.

Statistical Center of Iran. <https://amar.org.ir> [In Persian]

Tavlas, George S. "The case for flexible exchange rates." *Essays in positive economics* 203, no. 157 (1953). <https://doi.org/10.2307/2228046>.

Wallison, Peter J. "The Price for Fannie and Freddie Keeps Going Up." *Wall Street Journal* 29 (2009).

Zahedi, Yaqoub, Nader Rezaei, and Wadood Najari. "Measuring and Testing Mutual Transmission of Bubbles in Stock, Currency and Gold Markets (Case Study: Iran Using Copula Functions)." *Quarterly Journal of Financial Engineering and Securities Management* 14, no. 57 (2023): 135-154. [In Persian]

Zhao, Zhao, Huwei Wen, and Ke Li. "Identifying bubbles and the contagion effect between oil and stock markets: New evidence from China." *Economic Modelling* 94 (2021): 780-788. <https://doi.org/10.1016/j.econmod.2020.02.018>

Zou, Xuan. "Can the greater fool theory explain bubbles? Evidence from China." *Departmental Working Papers*, no. 4 (2018). <http://www.sas.rutgers.edu/virtual/snide/wp/2018-04.pdf>.