



Quarterly Journal of Quantitative Economics

Journal Homepage:
www.jqe.scu.ac.ir
Print ISSN: 2008-5850
Online ISSN: 2717-4271



The Impact of Domestic and Foreign Shocks on Industrialization of Iranian Economy

Mohammad-Reza Lotfalipour,* Taghi Ebrahimi Salari,^{id}** Mohammad Sadegh Adibian, ^{id}*** Emad Kazemzade, **** Amir-Hassan Akbari Khalilabad,***** & Farzad Asgharipour Zarkami*****

* *Professor of Economics, Department of Economics, Faculty of Administrative Sciences and Economics, Ferdowsi University of Mashhad, Mashhad, Iran*
Email: lotfalipour@um.ac.ir

** *Assistant Professor of Economics, Department of Economics, Faculty of Administrative Sciences and Economics, Ferdowsi University of Mashhad, Mashhad, Iran (Corresponding Author)*
Email: ebrahimi@um.ac.ir
^{id} [0000-0002-5290-6934](https://orcid.org/0000-0002-5290-6934)

Postal address: Department of Economics, Faculty of Administrative Sciences and Economics, Ferdowsi University of Mashhad, Mashhad, Postal code: 9177948951 , Iran

*** *PhD Student in Economics, Department of Economics, Faculty of Administrative Sciences and Economics, Ferdowsi University of Mashhad, Mashhad, Iran*
Email: adib.mohammad@gmail.com

**** *PhD Student in Economics, Department of Economics, Faculty of Administrative Sciences and Economics, Ferdowsi University of Mashhad, Mashhad, Iran*
Email: emad.kazemzadeh67@gmail.com

***** *Master of Economics, Department of Economics, Faculty of Administrative Sciences and Economics, Ferdowsi University of Mashhad, Mashhad, Iran*
Email: akbari.ahassan@gmail.com

***** *Master of Economics, Department of Economics, Faculty of Administrative Sciences and Economics, Ferdowsi University of Mashhad, Mashhad, Iran*
Email: farzadasgharipoor001@gmail.com

ARTICLE HISTORY

Received: 21 October 2019
Revision: 9 April 2021
Acceptance: 9 April 2021

**JEL
CLASSIFICATION**

E40, L10

KEYWORDS

*Industrialization,
Structural Vector Auto
Regression, Industrial
Production, Oil Price, Iran*

ACKNOWLEDGMENTS: Acknowledgments may be made to individuals or institutions that have made an important contribution.

CONFLICT OF INTEREST: The authors declare no conflict of interest.

FUNDING: The author(s) received no financial support for the research, authorship, and publication of this article.

How to Cite:

Lotfaliipour, M., Ebrahimi-Salari, T., Adibian, M., Kazemzadeh, E., Akbari Khalilabad, A. & Asgharipour Zarkami, F. (2021). The Impact of Domestic and Foreign Shocks on Industrialization of Iranian Economy. *Quarterly Journal of Quantitative Economics (JQE)*, 18(3), 1-34.

 [10.22055/JQE.2021.23780.1746](https://doi.org/10.22055/JQE.2021.23780.1746)



© 2021 Shahid Chamran University of Ahvaz, Ahvaz, Iran. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0 license) (<http://creativecommons.org/licenses/by-nc/4.0/>)

EXTENDED ABSTRACT

INTRODUCTION

The goal of all the world's economies is economic development. Many developed countries have experienced economic development through industry. In recent years we have witnessed an increasing trend among less developed countries to industrialize. That is why the discussion of "industrialization" is an important topic in the writings of economic development. Industrialization has been a major factor in the economic development of developed countries, and industrialization has deep links with the issue of underdevelopment and backwardness.

METHODOLOGY

The purpose of this study was to investigate the effect of structural shocks on inflation, oil prices, world price index, interest rate, money supply, exchange rate and

total production on industrial production based on quarterly data (1370-1395) and estimate the severity of the effect of each. On industrialization, using structural vector autoregression model (svar). The research data were extracted from the databases of the World Bank, the Central Bank, the Journal of Economic Indicators, the Statistics Center of Iran and OPEC.

FINDINGS

First, the effect of structural shock of variables on industrial production is estimated and the table of variance analysis is given below. The results showed that the shock of oil prices on the industrial sector, initially increases the production of the industrial sector, which can be due to expansionary policies, leading to long-term adjustment and neutralization. Other shocks also cause turmoil in industrial production, which, like oil price shocks, creates damping waves. The analysis table of variance of production of the industrial sector shows that in the first place, the explanation of the production of the industrial sector is the previous values of the production of the industrial sector, and with 41% of the reason for the changes, The power of shocks from global prices and interest rates with 39% and 13%, respectively, were named as the cause of changes. In fourth place is total production with 4% of the cause of change, other variables explain small amounts of the cause of change in the long run. The results showed that the variables of global prices and interest rates have the greatest impact on increasing the output of the industrial sector and given that the interest rate is one of the monetary instruments, so in practice the central bank can achieve the goal of maximum growth of industrial output. Also follow.

CONCLUSION

Given that the results show that oil revenues will strengthen industrial production in the short term but will be neutralized in the long term, it indicates important issues and very important political recommendations. First, the huge overflow of revenues from oil resources has not been able to Is to have a fundamental impact on industrial production, in other words, we have lost resources and have not been able to build industry; On the one hand, managerial inefficiency shows the use of oil revenues in the industrial sector, and on the other hand, it shows us a clear path ahead, or in other words, it shows us based on the past and seeing the performance. We can decide for the future. If our policy plan is the same as in the past, we will not be able to help industrialize with oil revenues. On the other hand, the results show that the most important part of explaining the changes in industrial production is the amount of industrial production in the past, and this indicates the infrastructure and market conditions in previous periods, so holding exhibitions to introduce and facilitate transactions, improvement Business and transactional conditions, maintaining and strengthening production infrastructure can be more useful than monetary policy, and

given that global price shocks justify about 39% of changes in industrial production, it shows the fact that the economy We are very much influenced by the international economy and most of the production resources of the industrial sector are supplied from the international market. The international market is also an important market for the sale of domestic industrial goods and at the same time an important market for the supply of alternative goods, so while interaction in the international economy has proven beneficial effects, it is a very important alarm for our country that political relations Our country and negative political interactions can cause profound damage to our industrial production. In other words, our industrial production is very sensitive to international economic relations, and this indicates the need for great caution in this regard.

Reference

- Ahmadi, L., emami, K., torabi, T., farzinvash, A. (2021). Comparative comparison of the effect of oil shock on macroeconomic variables in Iran and GCC countries. *Quarterly Journal of Quantitative Economics, (JQE)*, https://jqe.scu.ac.ir/article_16887.html?lang=en.(In Persian)
- Allsopp, C., & Vines, D. (2000). The assessment: macroeconomic policy. *Oxford review of economic policy*, 16(4), 1-32.
- Arouri, M. E. H., Lahiani, A., & Nguyen, D. K. (2011). Return and volatility transmission between world oil prices and stock markets of the GCC countries. *Economic Modelling*, 28(4), 1815-1825.
- Arsalani, Ali (2009). The effect of oil prices on macro variables in Iran during (1963-2002). *Master Thesis, Faculty of Economics, University of Tehran*.(In Persian)
- Bahrami, J., Nasiri, S. (2011). Oil Price Shocks and Dutch Disease: The Case of Iran. *Iranian Journal of Economic Research*, 16(48), 25-54. .(In Persian) Available at: https://ijer.atu.ac.ir/article_3063.html?lang=en
- Bahrami, Javid; Mohammadi, Teymour & shadi Bozorg. (2014). Asymmetric transfer of exchange rates to domestic price indices with SVAR approach. *Iranian Economic Research*, 60(1), 3.(In Persian) Available at: https://ijer.atu.ac.ir/article_1631.html?lang=en
- Bakhshi, P., Raheli, H., Ghahremanzadeh, M. (2016). The Impact of Oil Revenue Shocks and Exchange Rate Volatility on the Growth of the Agricultural Sector in Iran. *Agricultural Economics Research*, 8(31), 101-122. (In Persian) Available at: http://jae.miau.ac.ir/article_2075.html?lang=en

- Behboudi d., motafaker azad m.a., rezazadeh ali. (2009). The effect of oil price volatility on gdp in iran, *Journal of Energy Economics Review* 20(6), 1-31.(In Persian)
<https://www.sid.ir/en/journal/ViewPaper.aspx?ID=166607>
- Berument, M.H., N.B. Ceylan & N. Dogan. (2010). The Impact of Oil Price Shocks on the Economic Growth of Selected MENA Countries. *Energy Journal*, 31(1), 76-149.
- Blanchard, O.J. & L.H. Summers. (1988). Beyond the natural rate hypothesis. *American Economic Review*, 78(2), 182-187.
- Brown, S.P.A. & M.K. Yucel. (2002). Energy prices and aggregate economic activity: An interpretative survey. *Quarterly Review of Economics and Finance*, 42(2), 193-208.
- Chen, H., H. Liao, B.J. Tang & Y.M. Wei. (2016). Impacts of OPEC's political risk on the international crude oil prices: An empirical analysis based on the SVAR models. *Energy Economics*, 57(1), 42-49.
- Chen, N.F., R. Roll & S. A. Ross. (1986). Economic Forces and the Stock Market. *Journal of Business*, 59(3), 383-403.
- Cong, R.G., Y.M. Wei, J.L. Jiao & Y. Fan. (2008). Relationships between oil price shocks and stock market: An empirical analysis from China. *Energy Policy*, 36(9), 3544-3553.
- Quando, J. & F. Perez de Gracia. (2003). Do Oil price Shocks matter? Evidence for some European Countries. *Energy Economics*, 25(2), 137-154.
- Quando, J. & F. Perez de Gracia. (2005). Oil price, economic activity and inflation: evidence for some Asian countries; *The quarterly review of economics and finance*, 45(1), 65-83.
- De Gravwe, P. & S. Gunthter. (2008). Exchange Rate Stability, Inflation and Growth in South-Eastern and Central Europe. *Review of Development Economics*, 12(3), 530- 549.
- Espinasa, R., E. Ter Horst, S.G. Reyes, O. Manzano, G. Molina & R. Rigobon. (2017). A micro-based model for world oil market. *Energy Economics*, 66(1) 431-449.
- Filis, G., S. Degiannakis & C. Floros. (2011). Dynamic correlation between stock market and oil prices: The case of oil-importing and oil-exporting countries. *International Review of Financial Analysis*, 20(1) , 152-164.
- Grier, R. & K. Grier. (2006). On the real effects of inflation and inflation uncertainty in Mexico. *Journal of Development Economic*, 80(2), 478-500.

- Gronwald, M., J. Mayer & S. Orazbayev. (2009). Estimating the Effects of Oil Price Shocks on the Kazakh Economy. Ifo Working Paper No. 81, *Ifo Institute for Economic Research at the University of Munich*.
- Hadian Ebrahim & Parsa H. (2006). The Effects of Oil Price Fluctuation on the Macroeconomic Performance in Iran. *Journal of The Faculty of Humanities and Social Sciences*, 22(6), 111-132. (In Persian) Available at: <https://www.sid.ir/en/Journal/ViewPaper.aspx?ID=96458>
- Hamilton, J.D., (1983). Oil and Macroeconomy Since World War II. *Journal of Political Economy*, 91(2), 228-248.
- Huang, R.D., R.W. Masulis & H.R. Stoll, (1996). Energy shocks and financial markets. *Journal of Futures Markets*, 16(1), 1-27.
- Huang, Y. & F. Guo. (2007). The role of oil price shocks on China's real exchange rate. *China economic review*, 18(1), 403-416.
- Ivrendi, M. & B. Guloglu. (2010). Monetary Shocks, Exchange Rates and Trade Balances: Evidence From Inflation Targeting Countries, *Economic Modelling*, 27(5), 1144-1155.
- Jones, C.M. & G. Kaul. (1996). Oil and the Stock Market. *Journal of Finances*, 51(1), 463-491.
- Joong Kim, W., S. Hammoudeh, J.S. Hyun & R. Gupta. (2017). Oil Price Shocks and China's Economy: Reactions of the Monetary Policy to Oil Price Shocks. *Energy Economics*, 62(1), 61-69.
- Kahn, M., S. Kandel & O. Sarig. (2002). Real and Nominal Effects of Central Bank Monetary Policy. *Journal of Monetary Economics*, 49(8), 1493-1519.
- Kandil, M., H. Berument & N.N. Dincer. (2007). The Effects of Exchange Rate Fluctuations on Economic Activity in Turkey. *Journal of Asian Economics*, 18(3), 466-489.
- Keshavarzian, Maryam; Zamani, Mehrzad & Hoda Panahinejad. (2010). Spillover effect of us dollar exchange rate on crude oil price, *Energy Economics Studies*. 27(1), 131-154.(In Persian) <https://www.sid.ir/en/journal/ViewPaper.aspx?ID=196585>
- Kharas, H. & B. Pinto. (1989). Exchange Rate Rules, Black Market Premiums & Fiscal Deficits: the Bolivian Hyperinflation. *Review of Economic Studies*, 56(1), 435-447.
- Khatib Semnani, Mohammad Ali; Shojaei, Masoumeh & Masoud Shojaei Khosroshahi. (2014). Investigating the effect of crude oil price fluctuations on the yield index of Tehran Stock Exchange. *Quarterly*,

- Financial Economics*, 29(1), 89-114.(In Persian)
http://ecj.iauctb.ac.ir/article_515677.html
- Kilian, L. & C. Park. (2009). The Impact of Oil Price Shocks on the U.S. Stock Market. *International Economic Review*, 50(1), 1267-1287.
- Killins, R.N., P.V. Egly & D. Escobari. (2017). The impact of oil shocks on the housing market: Evidence from Canada and U.S. *Journal of Economics and Business*, 93(1), 15-28.
- Kling, J.L., (1985). Oil Price Shocks and Stock-Market Behavior. *Journal of Portfolio Management*, 12(1), 9-34.
- Komaijani, A., Nad Ali, M. (2005). The Selection of Appropriate Foreign Exchange Rate Regime for Iranian Economy with Regards to Oil Shocks.. *Iranian Journal of Economic Research*, 7(23), 1-37.(In Persian) https://ijer.atu.ac.ir/article_3764.html?lang=en
- Komijani, Akbar & Yazdan Naqdi. (2008). Analysis of the Production Effects in Industrial, Agricultural and Services Sectors on Inflation in Iranian Economy, *Quarterly Journal of Economic Research and Policy*, 16(45): 59-85.(In Persian)
https://qjerp.ir/browse.php?a_id=274&sid=1&slc_lang=en
- Kutan, A.M. & M.L. Wyzan. (2005). Explaining the Real Exchange Rate in Kazakhstan, 1996-2003: Is Kazakhstan Vulnerable to the Dutch Disease?. *Economic Systems*, 29(2), 242-255.
- Landon, S. & C.E. Smith. (2006). Exchange Rates and Investment good Prices: A Cross-industry Comparison. *Journal of International Money and Finance*, 25(2), 237-256.
- Lardic, S. & V. Mignon. (2008). Oil prices and economic activity: An asymmetric cointegration approach. *Energy Economics*, 30(3), 847-855.
- Madesha, W., C. Chidoko & J. Zivanomoyo. (2013). Empirical Test of the Relationship between Exchange Rate and Inflation in Zimbabwe. *Journal of Economics and Sustainable Development*, 4(1), 52-58.
- Mahdiloo, A., asgharipour, H. (2020). Nonlinear Transmission Mechanism of Monetary Policy from Exchange Rate Channel in Iran: Approach (MS-VAR). *Quarterly Journal of Quantitative Economics*, 17(1), 121-153. https://jqe.scu.ac.ir/article_14746.html?lang=en.(In Persian)
- Mehrabi Boshrabadi, Hossein; Sherafatmand, Habibeh & Ali Akbar Baghestny. (2010). Study on the Impacts of Exchange Rate Shocks and Gap of GDP on Inflation in Iran. *Monetary and financial economics*

- research, 33(1), 294-312.(In Persian)
https://danesh24.um.ac.ir/article_27032.html
- Mishkin, F.S., (2007). The Economics of Money, Banking and Financial Markets. Seventh Edition. *The Addison-Wesley Series in Economics*.
- Mohammadi, Timur & Amir Gholami. (2008). Investigating the effect of exchange rate equalization policy on basic macroeconomic variables. *Economic Research Journal*, 2(8),49-74.(In Persian)
https://joer.atu.ac.ir/article_3215.html
- Mork, K.A., (1994). Oil and macroeconomics when price goes up and down: An extension of Hamilton results. *Journal of political economic*, 97(3), 740-744.
- Mory, J.F., (1993). Oil price and economic activity: is the relation symmetric?. *Energy journal*. 14(4), 151-161.
- Motvseli, Mahmoud & Masoumeh Fooladi. (2006). Investigating the effects of rising global oil prices on GDP and employment in Iran using a general equilibrium model. *Journal of Economic Research*, 76(1), 51-76.(In Persian) https://jte.ut.ac.ir/article_18203.html?lang=en
- Murphy, K.M., A. Shleifer & R.W. Vishny. (1989). Industrialization and the big push. *Journal of political economy*, 97(5), 1003-1026.
- O' Neil, T.J., J. Penn & R.D. Terrell. (2008). The Role Higher Oil Prices: A Case of Major Developed Countries. *Research in Finance* 24(1), 287-299.
- Ontis, Z. & S. Ozmucur. (1990). Exchange Rates, Inflation and Money Supply in Turkey: Testing the Vicious Circle Hypothesis. *Journal of Development Economics*, 33(1), 133-144.
- Papapetrou, E., (2001). Oil Price Shocks, Stock Market, Economic Activity and Employment in Greece. *Energy Economics*, 23(1), 511-532.
- Park, J. & R.A. Ratti. (2008). Oil Price Shock Markets in the U.S. and 13 European Countries. *Energy Economics*, 30(1), 2587-2608.
- Pishbahar, Ismail & Maryam Baghestani. (2014). Investigating the economic effects of oil and food price shocks on Iran's macroeconomic variables. *Economic Research (Sustainable Growth and Development)*, 51(1), 45-64.(In Persian)
- Reyes, R.G. & C.E. Raguindin. (2005). The effects of oil price shocks on the Philippine economy: a VAR approach. Working paper. *University of the Philippines. School of economics*.
- Riman, H., E. Akpan & A. Offiong. (2013). Asymmetric Effect of Oil Price Shocks on Exchange Rate Volatility and Domestic Investment in

- Nigeria. *British Journal of Economics, Management & Trade* 3(4), 513-532.
- Romer, D., (2006). Advance Macroeconomics. Third Edition, *the Mc Graw-Hill companies*.
- Rutasitara, L., (2004). Exchange Rate Regimes and Inflation in Tanzania, *Department of Economics University of Dares Tanzania*.
- Sadeghi, Hussein; Lavasani, Keyvan Shahab and Mahmoud Baghjari. (2010). Effects of energy carrier price adjustment on macroeconomic variables using a structural vector autoregression (SVAR) model, *economic modeling research*, 1(2), 49-76.(In Persian)
- Sadorsky, P., (1999). Oil Price Shocks and Stock Market Activity. *Energy Economics*, 21(5), 449-469.
- Sadorsky, P., (2003). The Macroeconomic Determinants of Technology Stock Price Volatility. *Review of Financial Economics*, 12(2), 191-205.
- Samadi, Saeed; Sarkhoshsara, Ali and Omid Amini Darreh Vazan. (2018). Asymmetric Effects of Oil Price Shocks on Iran's Interest Rates and Economic Growth: A Linear VAR Model. *Economic Modeling Quarterly*. 5(1), 27-52.(In Persian) Available at: <https://www.sid.ir/en/Journal/ViewPaper.aspx?ID=684044>
- Samadi, Saeed; Shirani Fakh, Zohreh and Mahtab Davarzadeh. (2007). Investigating the influence of world price of gold and oil on the tehran stock exchange index: modelling and forecasting. *Journal of quantitative economics (quarterly journal of economics review)*, 2(4), 25-51.(In Persian) <https://www.sid.ir/en/journal/ViewPaper.aspx?ID=118123>
- Shafee, Mahbiz. (2005). The interrelationship of the world economy (growth and recession and inflation of the world economy) with the world oil price. Master Thesis, *Faculty of Social and Economic Sciences, Al-Zahra University. Tehran.*(In Persian)
- Shahbazi, Kiomars; Rezaei, Ebrahim and Yavar Salehi. (2013). The Impact of Oil Price Shocks on Stock Returns on the Tehran Stock Exchange: The SVAR Approach. *Financial knowledge of securities analysis (financial studies)*, 18(4), 125-136.(In Persian) https://jfksa.srbiau.ac.ir/article_2629.html?lang=en
- Shirin bakhsh s., bazazan f., zarei m. (2015). Evaluation of oil price shocks on stock market price. *Journal of asset management and financing*, 2(9), 15-32.(In Persian) <https://www.sid.ir/en/journal/ViewPaper.aspx?ID=571709>

- Sidrauski, M., (1967). Rational choice and patterns of growth in a monetary economy. *American economic review*, 57(2), 534-544.
- Stockman, A.C., (1985). Effects of Inflation on the Pattern of International Trade. *Canadian Journal of Economics. Canadian Economics Association*, 18(3), 587-601.
- Suri, Ali (2014). Advanced econometrics. *Farhangology Publishing*. (In Persian)
- Tabatabai Qomi, Zahra. (2009). Investigating the Relationship between Inflation and Economic Growth in Iran's Economy. *Bank and Economy Journal*, 20(1), 52-57. (In Persian)
<https://www.sid.ir/fa/journal/ViewPaper.aspx?ID=51283>
- Tamizi, Raziye. (2002). The relationship between oil price changes and economic growth in the Iranian economy during the period 1350-1378. *Master Thesis, Faculty of Economics, University of Tehran*. (In Persian)
- Tobin, J., (1965). Money and Economic Growth. *Econometrica*, 33(4), 671-684.
- Van der Ploeg, F. & S. Poelhekke. (2008). Volatility and the Natural Resource Curse. *Oxford Centre for the Analysis of Resource Rich Economies, Department of Economics*.
- Wei, C., (2003). Energy, the Stock Market, and the Putty-Clay Investment Model. *American Economic Review*, 93(1), 311-323.
- Yazdani, Mehdi & Somayeh Zare Gheshlaghi. (2016). Investigating Effect of Exchange Rate Shocks on Inflation in Iranian Economy during Seasonal Period 2000-2012. *Applied economic studies in Iran*. 17(1), 171-198. (In Persian) https://aes.basu.ac.ir/article_1413.html
- Yousefi, A. & T.S. Wirjanto. (2003). Exchange Rate of the US Dollar and the J Curve: The Case of Oil Exporting Countries. *Energy Economics*, 25(6), 741-765.