

THE EFFECT OF MINIMUM WAGE POLICY ON MALAYSIA'S CPI & PPI: AN INTERVENTION ANALYSIS

(Kesan Polisi Gaji Minimum ke Atas Indeks Harga Pengguna dan Indeks Harga Pengeluar Malaysia:
Satu Analisis Intervensi)

EMERZALINA EMERALDI & SITI NORAFIDAH MOHD RAMLI*

ABSTRACT

The minimum wage policy in Malaysia has been debatable due to contradicting perspectives among consumers and producers. While the consumers believe that the minimum wage policy is important to support their increasing cost of living, this policy has raised concerns among producers as they believe that this intervention might increase the cost of production, especially to producers who have been paying wages lesser than the policy's rate. Hence it is important to numerically assess the impact of the policy on Malaysia's consumer price index (CPI) and producer price index (PPI). To achieve this main objective, we built an intervention model using time series analysis and multiple linear regression. Based on both analyses, we conclude that only the PPI shows significant changes following the minimum wage policy implementation, whereby a decrease of 97.3% occurred in every month of 2014. However, there was no significant effect on the CPI during the first year of its establishment. Our 3 months forecast for the year 2018 also shows that the forecast of both indices is within the 95% confidence interval, which could imply that both indices are following the same fundamental structure during the 3 months period, despite the change in the Malaysian government ruling party.

Keywords: intervention analysis; ARIMA; multiple linear regression; producer price index

ABSTRAK

Dasar gaji minimum di Malaysia banyak diperdebatkan kerana perspektif yang bercanggah di kalangan pengguna dan pengeluar. Para pengguna mengalukan dasar gaji minimum bagi menyokong peningkatan kos sara hidup, dasar ini menimbulkan kebimbangan di kalangan pengeluar kerana kemungkinan peningkatkan kos pengeluaran, terutamanya bagi pengeluar yang membayar gaji lebih rendah daripada kadar dasar yang ditetapkan. Oleh itu, adalah penting untuk menilai kesan dasar ini terhadap indeks harga pengguna (CPI) dan indeks harga pengeluar (PPI) Malaysia. Untuk mencapai objektif utama ini, model intervensi dibina menggunakan analisis siri masa dan regresi linear berganda. Berdasarkan kedua-dua analisis, hanya IHP menunjukkan perubahan ketara berikutan pelaksanaan dasar gaji minimum, yang mana penurunan sebanyak 97.3% berlaku pada setiap bulan 2014 secara purata. Walau bagaimanapun, tiada kesan ketara ke atas IHP pada tahun pertama pelaksanaannya. Ramalan 3 bulan kami untuk tahun 2018 juga menunjukkan bahawa ramalan kedua-dua indeks berada dalam selang keyakinan 95%, yang mana ia mungkin bermakna bahawa kedua-dua indeks mengikuti struktur asas yang sama bagi tempoh 3 bulan selepas perubahan parti pemerintah kerajaan Malaysia.

Kata kunci: analisis intervensi; ARIMA; regresi linear berganda; indeks harga pengeluar

References

- Adebola S.S., Yusoff W.S.W. & Dahalan J. 2011. The impact of macroeconomic variables on Islamic banks financing in Malaysia. *Research Journal of Finance and Accounting* 2(4): 22-32.
- Afrah Z.A. 2017. Analisis model intervensi fungsi step terhadap indeks harga konsumen. BSc Thesis. Universitas Negeri Jakarta.
- Bakar A.S.A. 2018. Impak cukai barangan dan perkhidmatan (GST) ke atas indeks harga pengguna (IHP): Analisis intervensi. *5th Annual ECoFI Symposium 2018*, pp. 1-9.
- Crystine A., Hoyyi A. & Safitri D. 2014. Analisis intervensi fungsi step. *Jurnal Gaussian* 3(3): 293-302.

- Cuong N.V. 2011. Do minimum wage increases cause inflation? Evidence from Vietnam. *ASEAN Economic Bulletin* **28**(3): 337-359.
- Ghazali M.F., Yee O.A. & Muhammad M.Z. 2008. Do producer prices cause consumer prices? Some empirical evidence. *International Journal of Business and Management* **3**(11): 78-82.
- Harian Metro. 2022. Cabaran RM1,500 sebulan. <https://www.hmetro.com.my/rencana/2022/02/810041/cabaran-rm1500-sebulan> (26 January 2023).
- International Labour Organization. 2022. Statutory minimum wages – The example of Malaysia. https://www.ilo.org/global/topics/wages/minimum-wages/setting-machinery/WCMS_460943/lang--en/index.htm (14 April 2023).
- Jauhir H., Khamis A., Mustafa Z. & Zain S.M. 2001. Ramalan kepekatan oksigen terlarut menggunakan analisis siri masa di Sungai Langat, Hulu Langat Selangor. *Matematika* **17**(2): 77-87.
- Khamis A., Atan A.N., Razali S.N.A.M., Asrah N.M. & Saharan S. 2018. Modelling and forecasting Malaysian consumer price index. *International Journal of Science and Research* **9**(7): 1647-1650.
- Khamis A. & Xin T.L. 2020. Time series forecasting of Malaysia producer price index using ARIMA and grey models. *International Journal for Research in Applied Science & Engineering Technology* **8**(8): 1343-1348.
- Lorensya, Ambarwati L. & Mahatma Y. 2022. Analisis model intervensi multi input fungsi pulse dan fungsi step dengan deteksi outlier terhadap harga saham. *Jurnal EurekaMatika* **10**(1): 71-86.
- Mahyideen J.M., Yaakob H., Mohamad W.N. & Rusli N.A.M. 2022. Gaji Minimum RM1,500: Wajarkah ia dilaksanakan? *ASPIRASI FPP* Edisi 1: 19-22.
- Mahyut S.M. 2013. Minimum wage in Malaysia: The challenge on the implementation of the law. *International Journal of Business, Economics and Law* **3**(3): 30-37.
- Majaski C. n.d. Producer price index (PPI): What it is and how it's calculated. <https://www.investopedia.com/terms/p/ppi.asp> (1 January 2023).
- Mukhlis M., Kusunandar D. & Sulistianingsih E. 2015. Analisis model intervensi fungsi pulse (Studi kasus: Peramalan harga saham Malaysia Airlines dan jumlah wisatawan asing). *Buletin Ilmiah Matematika, Statistika dan Terapannya* **4**(3): 285-294.
- New Straits Times. 2014. MTUC: Increase minimum wage to RM1,200. <https://www.nst.com.my/news/2015/09/mtuc-increase-minimum-wage-rm1200> (17 April 2023).
- Ningsih D. & Andiny P. 2018. Analisis pengaruh inflasi dan pertumbuhan ekonomi terhadap kemiskinan di Indonesia. *Jurnal Samudra Ekonomika* **2**(1): 53-61.
- Nuralaina. 2016. Analisis intervensi fungsi step untuk peramalan nilai kurs Rupiah terhadap Dollar Amerika. MSc Thesis. Universitas Islam Negeri Alauddin.
- Panjawa J.L. & Soebagiyo D. 2014. Efek peningkatkan upah minimum terhadap tingkat pengangguran. *Jurnal Ekonomi & Studi Pembangunan* **15** (1): 48-54.
- Saari M.Y., Rahman M.A.A., Hassan A. & Habibullah M.S. 2016. Estimating the impact of minimum wages on poverty across ethnic groups in Malaysia. *Economic Modelling* **54**: 490-502.
- Senasi V., Halim S.K. & Parasuraman B. 2021. Minimum wage policy: Is there any impact on low skilled workers in electrical and electronics companies in Malaysia. *International Journal of Business and Society* **22**(1): 422-430.
- Setyowati U. 2006. Analisis faktor-faktor yang dipertimbangkan dalam penetapan upah minimum propinsi di Jawa Tengah (1990-2004). Bachelor Thesis. Universitas Negeri Yogyakarta.
- Shafiee N.S. 2015. Dasar gaji minimum: Implikasi terhadap pertumbuhan ekonomi Malaysia. *Conference Proceedings of Social Sciences Postgraduate International Seminar*, pp. 236-249.
- Venkadasalam S. 2015. The determinant of consumer price index in Malaysia. *Journal of Economics, Business and Management* **3**(12): 1115-1119.
- Yusof N., Nin L.F., Kamal H.K.M., Taslim J.R.A. & Zainoddin A.I. 2021. Factors that influence the inflation rate in Malaysia. *International Journal of Academic Research in Business & Social Science* **11**(9): 626-637.
- Zainal N.A. 2021. Hubungan indeks harga konsumen (IHK) dan impor terhadap inflasi di Indonesia menggunakan analisis regresi data panel. MSc Thesis: Universiti Islam Negeri Alauddin.
- Zulkifli A., Kogid M., Pinjaman S. & Alin J.M. 2021. Macroeconomic variables and Malaysia house price index. *International Journal of Academic Research in Economics & Management Sciences* **11**(1): 106-116.

Department of Mathematical Sciences
Faculty of Science and Technology
Universiti Kebangsaan Malaysia
43600 UKM Bangi
Selangor DE, MALAYSIA
E-mail: A176900@siswa.ukm.edu.my, rafidah@ukm.edu.my*

The Effect of Minimum Wage Policy on Malaysia's CPI & PPI: An Intervention Analysis

Received: 22 May 2023

Accepted: 24 July 2023

*Corresponding author