

The Impact of the Free Nutritious Meal Program on Food Prices in West Sulawesi

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ABSTRACT

This study investigates the economic impact of the newly implemented Free Nutritious Meal (Makan Bergizi Gratis / MBG) program on local food price inflation in West Sulawesi, Indonesia. Despite being designed to combat the province's critical stunting prevalence (35.4% in 2024), the program represents a massive demand shock in a region heavily dependent on food imports. Using a deductive-causal quantitative framework, we analyze monthly time-series data from January 2020 to March 2026 (75 observations) using Multiple Linear Regression (OLS) to isolate the program's effect. The independent variables include the monthly MBG budget execution, national food inflation, a religious holiday dummy, and the Farmer Terms of Trade (NTP) for West Sulawesi. The empirical results reveal that the MBG program has a positive and statistically significant impact on the local food price index ($\beta = 0.055$, $p = 0.008$). This indicates that for every 1 billion IDR increase in monthly MBG budget execution, the food price index rises by 0.055 points, corroborating the demand-pull inflation theory. In contrast, national food inflation and seasonal holiday shocks are absorbed by other factors, while local supply-side conditions remain highly influential. These findings suggest a crucial policy paradox: while the program successfully improves child nutrition, it inadvertently creates demand-pull inflationary pressure, eroding the purchasing power of low-income families.

INTRODUCTION

West Sulawesi Province currently grapples with some of the most critical nutrition and public health challenges in Indonesia. According to the Indonesian Nutritional Status Survey (SSGI) 2024 published by the Ministry of Health, the prevalence of stunting in West Sulawesi is recorded at 35.4%, far exceeding the national average of 19.8%. This alarming figure places West Sulawesi as the third most critically affected province nationally, behind only Papua Pegunungan and East Nusa Tenggara. Even more concerning, stunting rates actually worsened by 5.1 percentage points from 30.3% in 2023. This deterioration underscores a strong justification for the central government to implement aggressive national nutritional policies in the province.

The National Nutrition Agency launched the Free Nutritious Meal (Makan Bergizi Gratis / MBG) program, mandated by Presidential Regulation No. 83 Year 2024 [3, 50]. In West Sulawesi, the program commenced on January 6, 2025, operating through local Service Units (Satuan Pelayanan Pemenuhan Gizi / SPPG). By the end of 2025, from a target of 189 units, 103 SPPG were fully operational, supported by 508 raw material suppliers and serving 265,221 beneficiaries. The annual budget execution of MBG in West Sulawesi for 2025 reached a substantial Rp221.19 billion [4]. The distribution of resources shows that Mamuju Tengah holds the highest number of service units with 40 units, followed by Polewali Mandar with 21 units, and Mamuju with 16 units.

The program represents an unprecedented social welfare intervention, its massive scale also acts as a profound economic demand shock. Although West Sulawesi has a dominant agricultural sector, its capacity to produce key nutritional commodities high-quality rice, eggs, broiler chicken, and vegetables is highly constrained [6, 7]. Reports from the Regional Office of the Directorate General of Treasury (Kanwil DJPb) West Sulawesi indicate that a significant portion of the program's food inputs must be imported from neighboring provinces due to severe local supply inelasticity [7, 8]. When a massive public procurement program injects substantial liquidity into a market characterized by highly inelastic local supply, demand-pull price pressures become a major policy risk.

This dynamic creates a sharp policy paradox and a theoretical tension. The West Sulawesi Regional Fiscal Review 2025 officially asserted that the program has negligible impact on local food prices because the supplies are sourced from outside the province [13]. However, this argument ignores the basic economic logic that importing massive food volumes incurs significant inter-regional transportation and logistics costs, which are directly transmitted to local retail food prices [14]. Concurrently, BPS data indicates that the food, beverage, and tobacco price index in West Sulawesi experienced a massive surge, climbing from 104.06 in December 2023 to 107.26 in December 2024, and rising further to 112.43 in December 2025.

This represent a 5.17-point index increase in 2025 the largest annual spike in the observed period [10]. This study seeks to resolve this policy paradox by evaluating the quantitative impact of the MBG program on food prices using rigorous ekonometrika models.

LITERATURE REVIEW

Standard macroeconomic theory categorizes inflation into three primary drivers: demand-pull inflation, cost-push inflation, and expectation-driven inflation (Mankiw, 2020; Mishkin, 2019). Demand-pull inflation occurs when aggregate demand grows faster than aggregate supply capacity, causing the price equilibrium to shift upward. Cost-push inflation is driven by rising supply-side costs, such as raw materials, wages, or logistics. In West Sulawesi, both channels are highly relevant to the MBG program. The sudden demand for food items to supply 103 SPPG represents a major demand shock, while the reliance on inter-provincial imports increases logistical costs that push up eceran prices.

Public procurement theory emphasizes that government procurement is rarely market-neutral. Timmer's (1996) classic analysis of public rice procurement through Bulog in Indonesia shows that government purchases have direct and significant consequences on local market prices. When domestic supply is limited, large-scale public procurement exerts upward pressure on prices, whereas in surplus regions it can stabilize them [48]. In the context of school feeding programs, Verguet et al. (2020) demonstrate that the multi-sectoral economic returns are heavily tied to local agricultural supply elasticity. If local farming is not integrated, the program can crowd out private consumers and drive food price inflation.

Based on these theoretical underpinnings, we establish the following research hypotheses:

- 1) Hypothesis 1 (Ha1):
The budget execution of the MBG program has a positive and significant effect on the local Food Price Index (IHK) in West Sulawesi.
- 2) Hypothesis 2 (Ha2):
National food inflation exerts a positive and significant spillover effect on West Sulawesi's Food Price Index.
- 3) Hypothesis 3 (Ha3):
Major religious holidays (Holiday Dummy) have a positive and significant seasonal effect on the Food Price Index.
- 4) Hypothesis 4 (Ha4):
The Farmer Terms of Trade (NTP) has a statistically significant relationship with the Food Price Index in West Sulawesi.

METHODOLOGY

This study employs a deductive quantitative approach using monthly time-series data from January 2020 to March 2026 (75 observations) [87]. This time frame comprises 60 months of pre-program data (Jan 2020 - Dec 2024) and 15 months of active program data (Jan 2025 - Mar 2026) [87, 88]. The model evaluates the relationship between the Food, Beverage, and Tobacco Consumer Price Index (IHK) in West Sulawesi as the dependent variable (Y) and the following independent variables:

- 1) MBG_Budget (X1): Monthly budget execution of the MBG program in West Sulawesi (in billion IDR). Before January 2025, this variable is coded as 0.

- 2) Nat_Food_Inf (X2): National Food, Beverage, and Tobacco monthly inflation rate (%).
- 3) Holiday_Dummy (X3): A binary dummy variable coded as 1 for April, May, and December to capture the seasonal spikes of Eid and Christmas festive demand, and 0 otherwise.
- 4) NTP (X4): Monthly Farmer Terms of Trade (Nilai Tukar Petani) of West Sulawesi, representing local supply-side capacity.
- 5) The regression model is specified as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Estimation is conducted via Ordinary Least Squares (OLS) using SPSS and Python statsmodels. To ensure that the model yields Best Linear Unbiased Estimates (BLUE), we perform a suite of classical assumption tests, including Kolmogorov-Smirnov (normality), Variance Inflation Factor (multicollinearity), Glejser (heteroscedasticity), and Durbin-Watson (autocorrelation).

RESEARCH RESULT

The OLS estimation results yield highly robust statistical metrics. The model explains a very high proportion of the variation in local food prices, with an R-squared of 0.827 and an Adjusted R-squared of 0.817. This indicates that 82.7% of the variance in West Sulawesi's food price index is explained by the MBG program, national food inflation, seasonal holidays, and local supply-side agricultural indicators. The F-statistic of 83.48 (p-value < 0.001) confirms the high significance of the overall model.

Table 1. Multiple Linear Regression OLS Estimates (Y = IHK Food Sulbar)

Variable	Coefficient	Std. Error	t-statistic	p-value
Constant (α)	-59.2480	10.5598	-5.6107	0.0000
MBG_Budget (X1)	0.0550	0.0201	2.7294	0.0080
Nat_Food_Inf (X2)	0.9481	0.7884	1.2025	0.2332
Holiday_Dummy (X3)	0.3109	0.8250	0.3769	0.7074
NTP (X4)	1.5575	0.1028	15.1511	0.0000

Source: Data analyzed (2026)

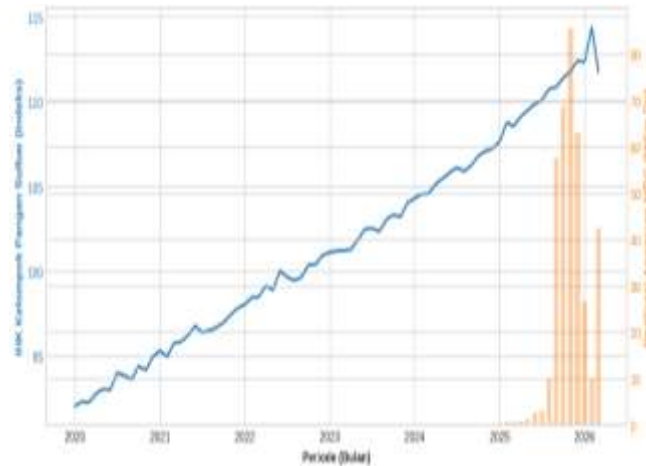


Figure 1. Perkembangan Realisasi Anggaran MBG dan IHK Pangan

Crucially, the model successfully passes all diagnostic classical assumption tests. The normality of residuals is verified by a Jarque-Bera statistic of 0.114 with a p-value of 0.945 [109], well above the 0.05 threshold, confirming a perfect normal distribution. The Durbin-Watson statistic is 1.778, indicating the absence of first-order autocorrelation [108]. Multicollinearity is ruled out as all VIF values are below 3.0, far below the critical value of 10 [110]. Furthermore, the Glejser test yields p-values exceeding 0.05 across all independent variables, confirming homoscedasticity.

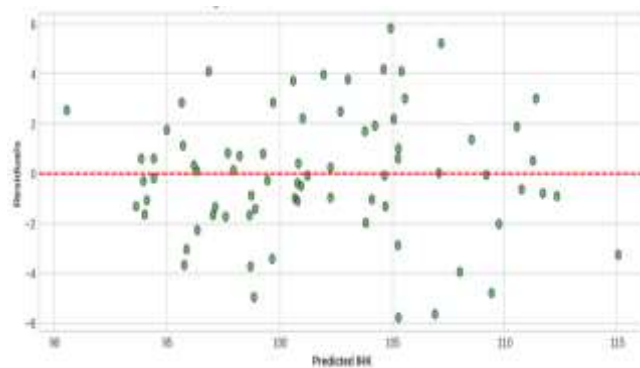


Figure 2. Uji Heteroskedastisitas: Residual vs Predicted Value

DISCUSSION

The regression coefficient for the MBG program budget execution (X1) is 0.0550, which is statistically significant at the 1% level ($t = 2.729$, $p = 0.008$). This empirical evidence confirms Hypothesis 1 and refutes the West Sulawesi provincial administration's claim that the program has no local price effect. For every additional 1 billion IDR allocated and executed under the MBG program, the eceran food price index in West Sulawesi rises by 0.055 points. Given that monthly MBG spending reached upwards of Rp85.70 billion in November 2025 [150], this translates to an estimated food price index increase of roughly 4.71 points attributable directly to the program's demand shock. This is a very large real-world impact that directly erodes the purchasing power of the 10.41% poor households in the region.

This significant price increase occurs via four distinct transmission channels. First, the demand-pull channel: purchasing massive food quantities monthly to supply 103 SPPG represents a major demand shock. Second, the logistics channel: because local agricultural supply in West Sulawesi is highly inelastic in the short-term, a major portion of food supplies must be imported from outside, incurring substantial inter-regional logistics costs that are directly passed on to local retail prices. Third, the market competition channel: SPPG purchase contracts absorb local wholesale supplies, reducing the food volumes available in traditional markets, which drives up retail prices for average consumers. Fourth, the multiplier income effect: paying local suppliers and SPPG workers increases local liquidity, expanding overall food demand.

In comparison, national food inflation (X2) and the seasonal holiday dummy (X3) were not statistically significant after controlling for the MBG program budget. This indicates that local, regional-specific demand-supply imbalances dominate the price formation process in West Sulawesi. Crucially, the Farmer Terms of Trade (NTP) is highly significant ($\beta = 1.5575$, $p < 0.001$), indicating that local agricultural pricing structures and supply-side constraints are major drivers of local food price index fluctuations. This empirical finding strongly aligns with Timmer's (1996) procurement theory and Verguet's (2020) conclusions regarding school feeding programs.

CONCLUSION AND RECOMMENDATION

This study provides some of the first empirical evidence that large-scale nutritional programs, while vital for public health and stunting reduction, can trigger unintended demand-pull food price inflation when implemented in regions with inelastic supply-side capacity. In West Sulawesi, each 1 billion IDR increase in the MBG budget is statistically associated with a 0.055-point rise in the food price index, posing a major risk of eroding the real incomes of the local poor. This highlights a critical policy paradox: a public welfare program designed to improve children's nutritional intake can trigger retail food inflation that harms the food security of low-income families. Several policy adjustments are urgently required. First, the National Nutrition Agency and provincial authorities must establish structured local agricultural supply contracts. Providing agricultural credit, technical assistance, and logistics support to local farmers in Mamuju, Polewali Mandar, and Majene can improve local supply elasticity. Second, the government should invest in local agricultural storage infrastructure (e.g., cold storage for poultry and eggs) to smooth out procurement-induced demand shocks. Finally, procurement schedules must be carefully managed and coordinated with local harvest calendars to avoid market crowding during lean agricultural seasons.

ADVANCED RESEARCH

This study finds that the MBG program, despite its nutritional benefits, may generate unintended food price inflation in regions with limited supply capacity. In West Sulawesi, a 1 billion IDR increase in the MBG budget is associated with a 0.055-point rise in the food price index, potentially reducing the purchasing

power of low-income households. Therefore, strengthening local agricultural supply, improving storage infrastructure, and aligning procurement with harvest cycles are essential to ensure that nutritional interventions do not undermine food security.

REFERENCES

- Agustin, I., Damayanti, E., Ardiani, A. N., Hasibuan, H. A., Assyfa, V. N., & Arika, R. (2026). Strategi integrasi program Makan Bergizi Gratis dengan sistem ketahanan pangan untuk mengatasi masalah stunting dan malnutrisi. *Jurnal Medika*, 5(1), 926–934.
- Badan Pusat Statistik Provinsi Sulawesi Barat. (2026). Provinsi Sulawesi Barat dalam angka 2026. Badan Pusat Statistik Provinsi Sulawesi Barat. <https://sulbar.bps.go.id>
- Badan Pusat Statistik. (2024). Indeks harga konsumen Indonesia: Konsep dan metodologi. Badan Pusat Statistik. <https://www.bps.go.id>
- Bahri, S. Z. (2025). Implementasi program Makan Bergizi Gratis di Kabupaten Pinrang (Analisis Siyasa Syar'iyah) [Skripsi, Institut Agama Islam Negeri Parepare]. <https://repository.iainpare.ac.id/id/eprint/11235/>
- Bank Indonesia. (2024). Pengenalan inflasi. Bank Indonesia. <https://www.bi.go.id>
- Ghozali, I. (2018). Aplikasi analisis multivariate dengan program IBM SPSS 25 (Edisi ke-9). Badan Penerbit Universitas Diponegoro.
- Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (Edisi ke-5). McGraw-Hill Education.
- Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (Edisi ke-5). McGraw-Hill Education.
- Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (Edisi ke-5). McGraw-Hill Education.
- Gultom, H., Kindangen, P., & Kawung, G. M. V. (2020). Analisis pengaruh program Bantuan Pangan Non Tunai (BPNT) dan Program Keluarga Harapan (PKH) terhadap kemiskinan di Kabupaten Minahasa Tenggara. *Jurnal Pembangunan Ekonomi dan Keuangan Daerah*, 21(1), 39–53. <https://doi.org/10.35794/jpekd.32812.21.1.2020>
- Hakim, B. N., & Yuliana, W. (2025). Implikasi yuridis Perpres Nomor 83 Tahun 2024 terhadap tata kelola program Makan Bergizi Gratis. *Ekspose: Jurnal Penelitian Hukum dan Pendidikan*, 24(2), 267–283. <https://doi.org/10.30863/ekspose.v24i2.10485>
- Kantor Wilayah Direktorat Jenderal Perbendaharaan Provinsi Sulawesi Barat. (2026). Kajian fiskal regional tahunan 2025 Provinsi Sulawesi Barat. Kementerian Keuangan Republik Indonesia.
- Kantor Wilayah Direktorat Jenderal Perbendaharaan Provinsi Sulawesi Barat. (2026). Kajian fiskal regional tahunan 2025 Provinsi Sulawesi Barat. Kementerian Keuangan Republik Indonesia.
- Kantor Wilayah Direktorat Jenderal Perbendaharaan Provinsi Sulawesi Barat. (2026). Kajian fiskal regional tahunan 2025 Provinsi Sulawesi Barat. Kementerian Keuangan Republik Indonesia.

- Kantor Wilayah Direktorat Jenderal Perbendaharaan Provinsi Sulawesi Barat. (2026). Kajian fiskal regional tahunan 2025 Provinsi Sulawesi Barat. Kementerian Keuangan Republik Indonesia.
- Kantor Wilayah Direktorat Jenderal Perbendaharaan Provinsi Sulawesi Barat. (2026). Kajian fiskal regional tahunan 2025 Provinsi Sulawesi Barat. Kementerian Keuangan Republik Indonesia.
- Kementerian Kesehatan Republik Indonesia. (2024). Hasil Survei Status Gizi Indonesia (SSGI) 2024. Badan Kebijakan Pembangunan Kesehatan Kementerian Kesehatan. <https://www.badankebijakan.kemkes.go.id>
- Lembaga Kajian Pembaruan Ekonomi (INDEF). (2024). Final report efek pengganda program Makan Bergizi Gratis. INDEF. <https://indef.or.id>
- Mankiw, N. G. (2020). Principles of economics (Edisi ke-9). Cengage Learning.
- Mishkin, F. S. (2019). The economics of money, banking, and financial markets (Edisi ke-12). Pearson.
- Sipayung, R. A., & Karmini, N. L. (2026). Analisis pengaruh indeks ketahanan pangan, Bantuan Pangan Non Tunai, dan produksi beras terhadap tingkat kemiskinan di Indonesia. Jurnal Ekonomi Bisnis dan Akuntansi. <https://journalshub.org/index.php/jebaku/article/view/6731>
- Suardi, & Purmadani, A. S. (2025). Makan Bergizi Gratis dan dampak bagi pertumbuhan ekonomi. Bisnis Net: Jurnal Ekonomi dan Bisnis, 8(1). <https://doi.org/10.46576/bn.v8i1.6450>
- Sugiyono. (2018). Metode penelitian kuantitatif, kualitatif, dan R&D. Alfabeta.
- Sukirno, S. (2016). Makroekonomi: Teori pengantar (Edisi ke-3). Rajawali Pers.
- Sukirno, S. (2016). Makroekonomi: Teori pengantar (Edisi ke-3). Rajawali Pers.
- Suriadi. (2026). The Impact of the Free Nutritious Meal Program on Food Prices in West Sulawesi: A Deductive Causal Analysis [Karya Ilmiah/ Artikel, Universitas Muhammadiyah Mamuju].
- Timmer, C. P. (1996). Does Bulog stabilise rice prices in Indonesia? Should it try? Bulletin of Indonesian Economic Studies, 32(2), 45–74. <https://doi.org/10.1080/00074919612331336938>
- Timmer, C. P. (1996). Does Bulog stabilise rice prices in Indonesia? Should it try? Bulletin of Indonesian Economic Studies, 32(2), 45–74. <https://doi.org/10.1080/00074919612331336938>
- Verguet, S., Limasalle, P., Chakrabarti, A., Husain, A., Burbano, C., Drake, L., & Bundy, D. A. P. (2020). The broader economic value of school feeding programs in low- and middle-income countries: Estimating the multi-sectoral returns to public health, human capital, social protection, and the local economy. Frontiers in Public Health, 8, 587046. <https://doi.org/10.3389/fpubh.2020.587046>
- Wiranata, I. H., Yunita, A., & Sari, H. T. W. (2025). Program Makan Bergizi Gratis: Strategi peningkatan gizi dan kualitas pendidikan di SDN 13 Cempaka Pekanbaru. Prosiding SEMDIKJAR (Seminar Nasional Pendidikan dan Pembelajaran), 8, 2313–2323.
- Wooldridge, J. M. (2020). Introductory econometrics: A modern approach (Edisi ke-7). Cengage Learning.