



Rice
Science

FOR
DECISION-
MAKERS

VOL. 13 • DECEMBER 2024 • ISSN 2094-8409

WHAT CONTRIBUTES TO PALAY FARMGATE PRICE FORMATION?

KEY POINTS

- Palay farmgate price (PFP) serves as a pivotal factor in farmers' planting decisions, significantly influencing rice supply, wholesale and retail prices, and the overall affordability of rice, which has broad implications for food security and economic stability.
- PFP is influenced by intrinsic grain quality, reference prices, NFA interventions, research and development, and market outlets. Moisture content and previous season's prices are significant contributors, while market outlets are relatively minor.
- Several policy actions can be taken to enhance the quality of palay, support farmers' incomes, and ensure that rice remains affordable for consumers. These include: improving postharvest facilities, increasing the availability of market information through digitalization, refining support for production and marketing, enhancing government procurement processes, and strengthening public and private sector collaboration.

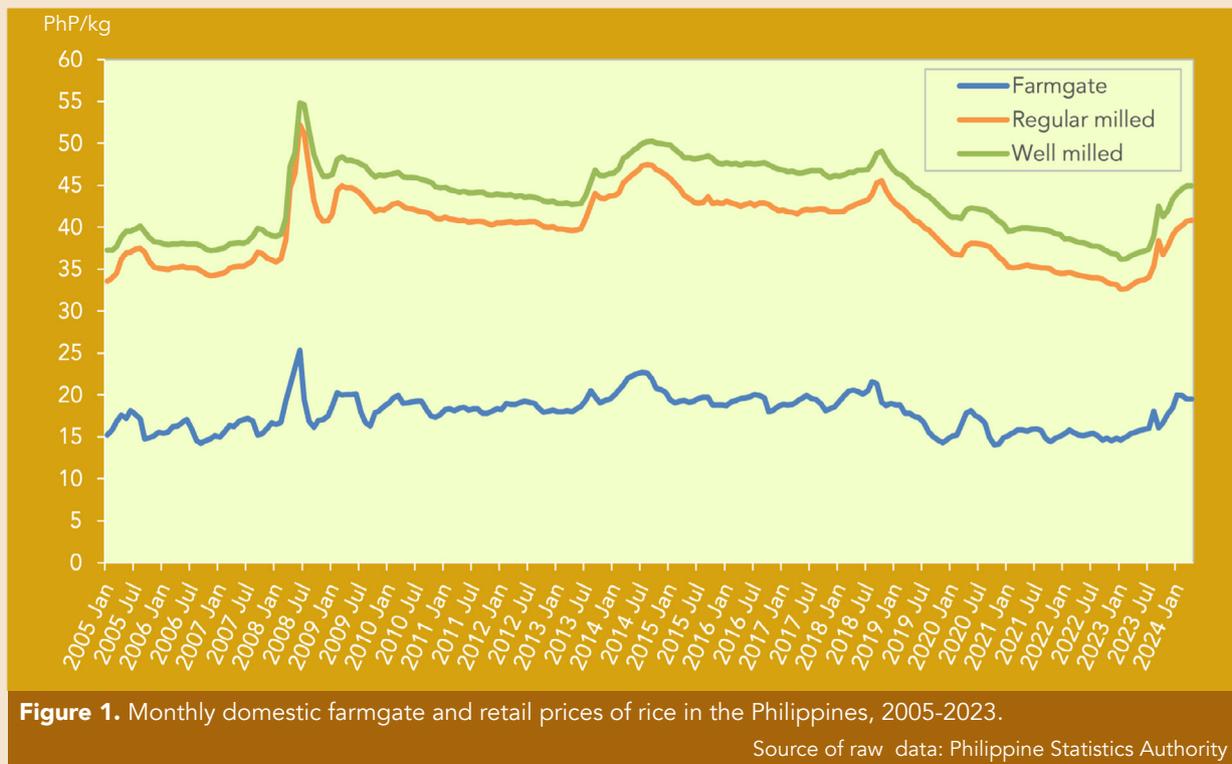
INTRODUCTION

Palay farmgate price is a key consideration in a farmer's decision to plant: a high price pushes them to cultivate rice in larger areas; a low price could make them plant other crops. Consequently, the rise and fall in farmgate price heavily influences changes in wholesale and retail prices of milled rice, compromising the affordability of rice among consumers. With rice eating up the largest share in food expenditures, it has an inflationary effect that impacts the whole economy. This underscores the importance of understanding the formation of palay prices. Even so, the movements in farmgate prices frequently remain a paradox.

A case in point is the enactment of Republic Act 11203 (Rice Tariffication Law) in 2019. Rice supply has become more stable with imports complementing domestic production. This initially led to more affordable milled rice but also dragged down the farmgate price, narrowing the profit margin of farmers and at times driving them to losses. This loss was exacerbated by the increasing price of inputs, particularly fertilizer and fuel, which further cooled down farmers' incentives to continue farming.

However, when India banned the export of its ordinary white rice in 2023, international and domestic prices, including farmgate price, exorbitantly shot up despite remaining within the RTL regime (Figure 1). This situation made farmers enjoy higher farmgate prices and good profit margins but came at the detriment of consumers who bear the burden of expensive milled rice. This implies that many factors influence the formation of PFP, underscoring the need for deeper understanding. This is crucial in framing policies to strike a balance between farmers earning a decent income while maintaining affordable rice for consumers.

This policy brief aims to delve into the factors that shape farmgate price based on econometric analysis and a comprehensive vetting process conducted among rice experts and stakeholders. Accordingly, a call for action on investment priorities and policy recommendations is presented.



FACTORS AFFECTING FARMGATE PRICE FORMATION

A Pooled Ordinary Least Squares (POLS) regression was used to determine the factors that help form the farmgate price, grouped into: 1) intrinsic attributes of grain quality; 2) reference prices; 3) NFA interventions; 4) R&D, mechanization, and infrastructure; and 5) market outlets (Figure 2a).

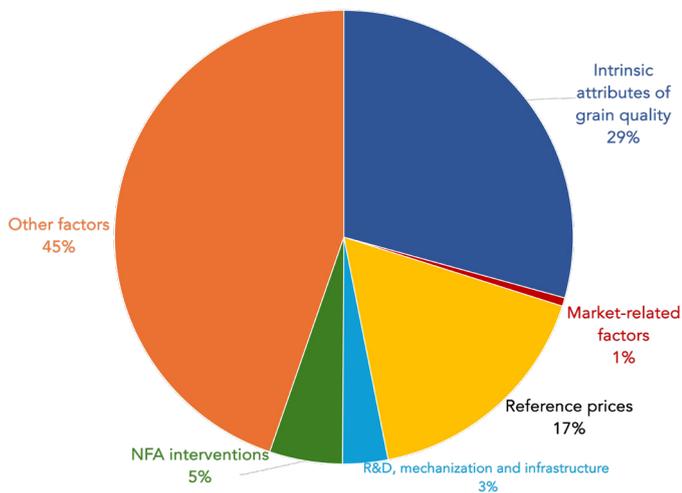


Figure 2a. Results of the regression model on price formation.

Intrinsic attributes of grain quality. Poor physical and grain qualities of rice have been a major concern in the country. Moisture content (MC) above 14% often results in low milling recovery, a high percentage of broken grains, and discoloration, which easily translates to a lower palay price and poor quality of milled rice. Regression results show that much of the contribution of this category is driven by MC (26% out of 29%). Other consequential factors from the regression analysis are amylose content, paddy grade, and grain length.

Reference prices. These include the farmgate price paid to farmers in the previous season and the average provincial farmgate price. These trends account for 17% of the variation in farmgate prices, based on the regression estimates. This suggests that the current farmgate price is substantially influenced by the price in the previous season and the provincial location of the farm.

NFA interventions. For decades, the NFA had bought palay from farmers during peak harvest periods at a floor price, which influenced farmgate prices. However, the enactment of RTL had relegated the NFA's role to maintaining buffer stocks procured locally for emergency purposes. This limits the NFA-procured volume, and consequently, its influence on the market. Based on regression results, NFA intervention has only contributed



5% to farmgate price formation even when including data prior to 2019. This suggests that the NFA's influence on price formation has diminished since the RTL took effect.

Research and development, mechanization, and infrastructure. These refer to the use of new-generation modern varieties (inbred and hybrid), high-quality seeds, machines, and irrigation, leading to less mixture, uniform maturity of grains, and less unfilled grains. These spell better grain quality, which is a critical factor for higher price. However, the results sketch a marginal impact at 3% on farmgate price formation. This group of factors is more focused on increasing yield and production, which has an inverse relation with price, implying offsetting effects.

Market outlet. The outlet where farmers sell their produce also influences the price they receive. Private millers and NFA have higher buying prices compared to other outlets. Nonetheless, the results found a negligible impact of farmers' market outlet at 1% on farmgate price formation.

Other Factors. Due to data limitations, the model was only able to explain 55% of the farmgate price variation. This implies that other variables not included in the model have significant contributions, necessitating further investigation. Hence, vetting based on experts' opinion and experiential knowledge leading to consensus building was used to delve into other factors not captured by the regression model. The regression results served as the basis for industry experts in the vetting process and were further validated.

RESULTS OF VETTING ON FARMGATE PRICE FORMATION

In the process of consensus-building, percent contributions of the above-enumerated factors were updated. Experts' opinions recognized the following contributions to price formation: 1) intrinsic attributes of grain quality (19%); 2) reference prices (18%); 3) NFA interventions (10%); 4) R&D, mechanization, and infrastructure (15%); and 5) market outlet (18%) (Figure 2b).

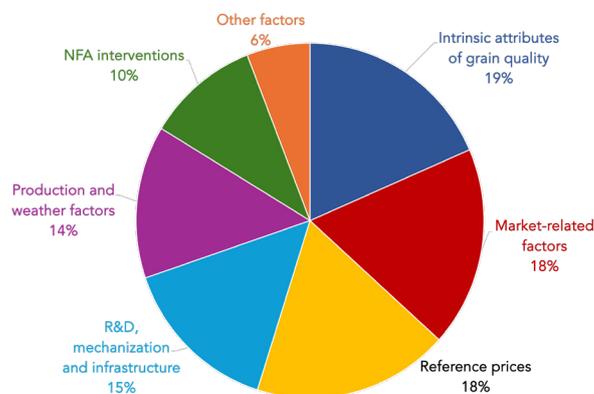


Figure 2b. Results of the vetting process of factors affecting price formation.

Besides those included in the regression model, production-related and weather-related factors were identified as contributory (14%) to explaining farmgate price formation. Other factors' contributions were reduced to 6%, attributed to international trade, price manipulation, asymmetric access by farmers to market information, and logistics and transportation.

CALL FOR ACTION

The regression and vetting process results reinforce the importance of improving palay quality, access to market information, and enhancing production support and infrastructure as the foremost contributory factors to farmgate price formation. The following actions are recommended:

- **Facilitated farmers' access to postharvest facilities.** Guaranteeing excellent physical and grain qualities of palay requires access to postharvest facilities, particularly dryers and moisture meters. Government programs provide these facilities to farmer cooperatives and associations (FCAs), but more farmers need to be reached. One way is by mandating recipient FCAs to engage in toll services for their members as well as non-members. PhilMech and DA-RFOs must strictly monitor the utilization of these facilities. Another way is for the NFA to refurbish its drying and storage facilities.
- **Updated knowledge of farmers on grain quality, attributes, and value.** Wider information dissemination of grain standards and classification, varietal groupings in terms of inherent grain characteristics, and corresponding market values can help update farmers. These details should be included as a module in training activities and in knowledge-sharing and learning sessions for farmers and market players. PhilRice can collaborate with BAFS, ATI, DA-AMAS, NFA, DA-RFOs, and LGUs in these activities.
- **Increased availability of, and stakeholders' access to, science-based market rice information.** Farmers, consumers, market players, and policymakers have limited access to relevant, reliable, and timely information about prices. This leads to lower income for farmers, more expensive rice for consumers, and uninformed policies.

Existing price monitoring surveys of PSA must be supplemented with near-real-time data. The DA-Agribusiness and Marketing Assistance Service could spearhead the consolidation of real-time market information through crowdsourcing and use of digital platforms. It can coordinate with government agencies involved in gathering price data and facilitate data sharing. Definitions of price parameters should be standardized; methods of data collection should be harmonized; digital applications should be interoperable; and analysis and reporting should be near-real-time. Additionally, public and private sector collaboration to form an IT/digital transformation system for the value chain should be strengthened.

In the same manner, R&D institutions such as PhilRice, IRRI, PIDS, NEDA, and BSP can maximize the use of this price information to develop market outlooks, projections, and forecasts. Stakeholders can utilize these references in making market-related decisions and policies. Regulatory agencies can also use these references as a basis for enforcing rules and safeguarding market competition.

All told, greater availability and accessibility of market information lead to convergence of separate market players, strengthening linkages and solidifying their exchanges regarding the rice market.

- **Responsive support for enhanced production and marketing capacity.** The DA-National Rice and RCEF Programs provide free seeds (hybrid and inbred), fertilizers, machines, training and extension advisory services, credit, small irrigation systems, and fuel subsidy. Farmers' access to these services can be made easier through further refinement and updating of the Registry System for Basic Sectors in Agriculture (RSBSA) for greater dynamism and inclusivity.

Modernized road networks branch out to lower transportation costs, ease consolidation for traders, and result in better price offers for farmers. The establishment of a paddy wholesale market, which is widely institutionalized in Thailand, lessens the market power of traders over farmers. Such market power engenders lower search costs for farmers, better credibility of traders, and easier government regulation (Figure 3).

- **Institutionalized government procurement support.** The NFA can expand palay procurement to increase the volume of buffer stock by amending its buying guidelines

under the amended RTL. Its post harvest facilities can be made more accessible to farmers through toll services. It can also shorten storage time and facilitate faster turnover of stocks.

Government procurement can also be augmented through greater LGU participation by tapping the additional funds under the Mandanas-Garcia ruling. They could establish local storage for rice, making it accessible during emergency situations. The LGUs may also enter into a Memorandum of Agreement with the NFA regarding the use of its facilities for drying, weighing, moisture content measurement, and storage while building their own facilities. Non-rice-producing LGUs could execute agreements with rice-producing LGUs on procuring rice for their buffer stocks.

The additional market option presented by government procurement emboldens the farmers' capacity to negotiate for better prices and encourages their greater market participation, thereby maximizing value for their product.

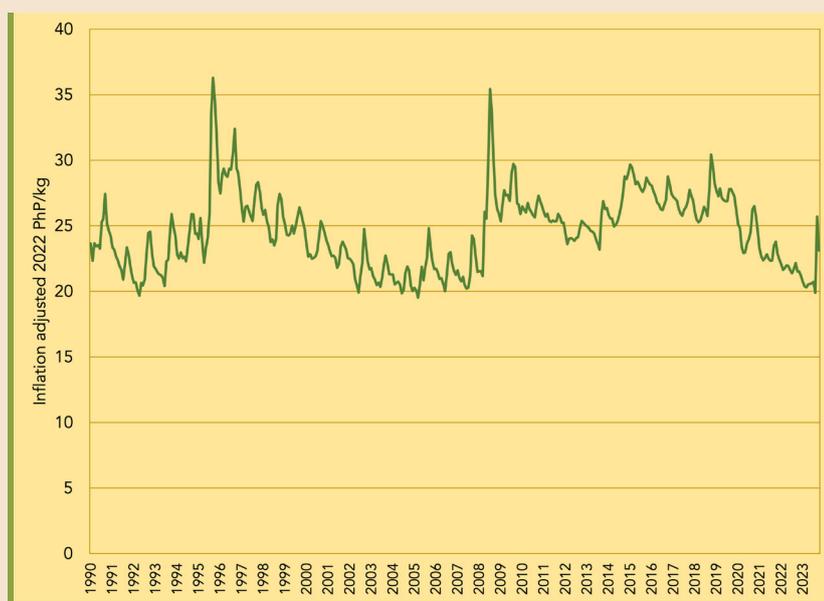


Figure 3. Monthly inflation-adjusted rice marketing margins, national average, January 1990 to December 2023.

Source of raw data: Philippine Statistics Authority

Notes: The graph shows the difference between the retail price of regular milled rice and the farm price of palay, deflated by the Philippine CPI and adjusted to 2022 prices.

ABOUT THE MATERIAL

Rice Science for Decision-Makers is published by the Department of Agriculture-Philippine Rice Research Institute (DA-PhilRice). It synthesizes findings in rice science to help craft decisions relating to rice production and technology adoption and adaptation. It also provides recommendations that may offer policy triggers to relevant rice stakeholders in search of opportunities to share their knowledge on rice-related products.

The articles featured here aim to improve the competitiveness of the Filipino rice farmers and the Philippine rice industry through policy research and advocacy.

This issue of RS4DM examines the formation of palay farmgate prices in the Philippines, highlighting key factors, the impact of the Rice Tariffication Law, and actionable recommendations to balance farmers' income and rice affordability.

For comments and requests for additional copies, please write to:

Socioeconomics Division

DA-Philippine Rice Research Institute
Malligaya, Science City of Muñoz, Nueva Ecija
Contact: philrice@philrice.gov.ph
PhilRice Text Center: 0917-111-7423

Rice Science for Decision-Makers • December 2024

Technical Team:

PhilRice: **Jesusa C. Beltran, PhD; Rhemilyn Z. Relado-Sevilla; Rowena G. Manalili; Nefriend M. Francisco; Lea E. Licong; and Flordeliza H. Bordey, PhD**

International Rice Research Institute: **Harold Glenn A. Valera, PhD; Piedad F. Moya; Maureen M. Gimutao; Ronald Jeremy S. Antonio; Ma. Shiela D. Valencia; and David C. Dawe, PhD**

Advisers: **Eduardo Jimmy P. Quilang, PhD; and Karen Eloisa T. Barroga, PhD; and Hazel V. Antonio, PhD**

Design and Layout: **Mark Joseph R. Zuñiga**

Published by PhilRice as a policy advocacy material.



Philippine Rice Research Institute
Central Experiment Station
Malligaya, Science City of Muñoz, 3119 Nueva Ecija