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A SYMPOSIUM ON COMPETITION POLICY IN THE PHILIPPINES

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The Philippine Competition Commission: the first ten years

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Over the past ten years, the Philippine Competition Commission (PCC) has evolved from a nascent regulatory agency into an enforcement body with an expansive operational footprint. As of June 2026, the Commission's enforcement activities have yielded tangible results, including the processing of 383 merger and acquisition (M&A) transactions representing a total economic value of ₱7.39 trillion. This oversight is distributed across the economy's most critical infrastructure blocks, such as manufacturing (61 transactions), finance and insurance (64), real estate (50), electricity and gas (53), and transportation and storage (39). Among these transactions, eight have been approved after securing voluntary commitments from parties. There has been only one merger explicitly prohibited by the Commission—a 2019 transaction involving the acquisition of sugar milling and refining assets. In terms of investigations, the PCC has launched 57 preliminary inquiries, advanced 44 full administrative investigations, filed 12 statements of objections, and conducted three dawn raids. The Commission has actively championed pro-competitive government policies by bringing competition principles into mainstream policy discussions, promulgating 49 rules and guidelines, and conducting 57 policy research papers and sector studies covering a variety of industries and laws.

The Philippine Competition Act (PCA) in 2015 marked a watershed moment in the nation's economic governance. It established the legal framework to prohibit anti-competitive agreements, abuse of dominant positions, and anti-competitive mergers and acquisitions. At the helm of this mandate is the Philippine Competition Commission (PCC), an independent quasi-judicial body tasked with ensuring that markets remain vibrant and competitive. As the PCC celebrates its tenth anniversary, this symposium of the *Philippine Review of Economics* serves as a way to look back on a decade of the institution's growth and to preview the challenges that lie ahead. It does so by presenting research that looks at

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competition and policy issues in both traditional markets (e.g., rice and labor), as well as digital platforms (e.g., ride-hailing and food delivery apps). Our call for papers sought contributions that would highlight the importance of rigorous economic analysis and its interactions with public policies in today's markets. The selected papers,[1] discussed next, provide insights into enforcing antitrust policy within a developing country context and a clear indication that more can still be done to safeguard competition.

In “Tariff cuts without consumer gains? A competition policy perspective on Philippine price trends”, Trinidad, Ravago, and Balisacan examine why rice prices in the Philippines have remained persistently high despite falling global rice prices and major trade liberalization reforms. They find that neither the 2019 removal of quantitative restrictions on rice imports and their replacement with tariffs nor the subsequent 2024 tariff cuts resulted in sustained reductions in retail prices. To better understand the sources of this incomplete pass-through, the authors estimate a Vector Error Correction Model (VECM) and Structural Vector Autoregression (SVAR) using almost two decades of monthly data and find that domestic price movements are more closely linked to inventories, imports, and wholesale pricing dynamics than to landed import costs. The paper argues that these findings are consistent with structural and institutional constraints that limit effective competition and weaken price transmission. The broader conclusion is that tariff reductions alone are unlikely to deliver sustained consumer benefits unless accompanied by stronger market governance, improved infrastructure, and competition-enhancing reforms that address frictions within the domestic supply chain.

In “Local labor market concentration and union activity in the Philippines: descriptive estimates and implications”, Ramos, Jopson, and Suguitan examine whether workers in the Philippines are less likely to organize and bargain collectively in labor markets where employment is concentrated among a small number of firms. Concentration in labor markets has traditionally not been within the purview of competition authorities. However, labor market concentration and monopsony power are increasingly receiving attention, with the United States explicitly incorporating labor market concerns in its new merger guidelines, the European Union including them in its draft merger guidelines, and the United Kingdom’s Competition and Markets Authority (CMA) issuing a major report on labor market concentration and employer power. Motivated by these developments, this paper documents high levels of labor market concentration even under broad market definitions, finding that between one-fifth and two-thirds of industry-region labor markets qualify as highly concentrated. It also documents a strong positive correlation between product-market concentration and labor-market concentration. More importantly, the study finds that higher employer

[1] The articles in this symposium have gone through the *Philippine Review of Economics’* normal refereeing and revising process.

concentration is negatively associated with union activity, with increases in labor market concentration and with a lower probability of new union registrations and collective bargaining agreements. Other measures, such as payroll-based concentration and union density, also display negative correlations with labor outcomes. The paper concludes by suggesting that the PCC should not only be concerned with concentration in downstream product markets and the associated welfare effects but also pay attention to concentration in upstream labor markets in order to obtain a fuller picture of welfare effects.

The article, "The Grab-Uber merger: a retrospective", by Icasiano and Libre provides an *ex-post* critique of the 2018 *motu proprio* review of the transaction involving two ride-hailing apps which would have consolidated a 93 percent market share into a virtual monopoly. This was a landmark merger case for competition authorities in Southeast Asia, and in particular, the Philippines, as it tested its mandatory merger regime while also highlighting concerns involving platforms. The authors highlight this structural challenge by demonstrating how asset-light markets can evade traditional asset- or revenue-based notification thresholds. The paper argues that the passenger-centric market definition overlooked the platforms' core economic function as a two-sided intermediary. Further, while the behavioral remedies established a baseline for enforcement in PCC, they heavily prioritize passenger welfare. The authors then conclude that a proper intermediation-based regulatory lens would have resulted in a more holistic remedy package, looking beyond passenger fare caps to actively monitor platforms' transaction spreads, audit exclusionary driver incentive structures, and mandate data portability to lower switching costs.

The paper, "Multihoming and platform choice in online food delivery", by Jopson, Manenti, Mariuzzo, Salas, and Zhang is motivated by the fact that online food delivery is a multisided digital platform involving restaurants, riders, and consumers, where indirect network effects are important, and a key competition concern is whether platforms can lock in different market participants. Thus, rather than focusing directly on prices and market power, the paper examines the factors associated with end users' and delivery riders' decisions to multihome or single-home. Because multihoming can weaken lock-in effects, the paper also investigates, among those who single-home, which platform and individual characteristics are associated with choosing GrabFood over *foodpanda*. Using data from two surveys conducted across five large regions of the Philippines in 2023, the authors find that, among users, multihoming is more likely among those with higher spending, though not necessarily higher income, and is not strongly correlated with other demographic characteristics. Multihoming is also more likely in areas with denser rider networks. For riders, multihoming appears more likely in areas with higher demand and less likely when riders perceive limited opportunities on competing platforms. Conditional on single-homing, platform choice among users appears to reflect differences in local network conditions and platform attachment, with GrabFood users tending to rely on denser rider networks while reporting weaker platform loyalty than *foodpanda* users. For riders, single-platform choice appears to reflect differences in compensation structures, administrative requirements, and local demand conditions.

Although this symposium does not reflect the full breadth of markets that the PCC has looked into, the four papers provide a snapshot of its activities and strategic enforcement areas in the last decade. Structural frictions and incomplete price pass-through in the agricultural sector underscore the need for PCC's vigilance in monitoring these markets through active governance and sector inquiries. The empirical investigation into local labor market concentration highlights the need to pay closer attention to upstream employer monopsony power and its negative association with union registrations and collective bargaining agreements. This illustrates an emerging frontier for the PCC, similar to advancements seen in more mature jurisdictions. The retrospective on the Grab–Uber merger highlights the operational realities PCC faces and offers lessons on refining its notification thresholds. Finally, the analysis of multihoming in online food delivery connects directly to the PCC's ongoing mandate to monitor digital platform lock-in and provides a framework to understand platform choice. Taken together, the studies not only mirror the diverse issues faced by the country's antitrust regulator but also provide data-driven insights to guide some of the PCC's evolving enforcement architecture.

There is more work to be done as PCC continues to grow into a mature competition agency. Scholarship and the rigor that comes with it should be at the heart of its way forward. Through this symposium, we hope to inspire further work in competition policy in the Philippines. We thank all our contributors and reviewers for their dedication to this work and look forward to the next decade of the PCC.

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Tariff cuts without consumer gains? A competition policy perspective on Philippine price trends

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This article examines why domestic food prices in the Philippines, especially rice, have remained high despite falling global prices and trade liberalization. Although the 2019 removal of quantitative restrictions and the introduction of tariffs initially lowered rice prices, the expected continued decline did not occur. Using a Vector Error Correction Model and Structural Vector Autoregressive framework, we analyze price movements across retail, wholesale, and farmgate levels over the past two decades. Results show limited pass-through from international prices to local markets, indicating downward price rigidity. We pinpoint potential contributing factors, including speculative behavior, weak competition, and structural and regulatory barriers, resulting in shocks to stocks and imports. Historical decomposition reveals the increasing influence of wholesale price shocks and inventory fluctuations on domestic price trends. The findings underscore the importance of integrating trade reforms with robust competition policies and effective market governance to manage inflation and improve food security.

JEL classification: D4, F13, L41, O13, Q17, Q18
Keywords: Rice trade, imperfect competition, Philippines, rice price-rigidity

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1. Introduction

In developing economies such as the Philippines, food is not merely a basic necessity—it is a central determinant of household welfare and macroeconomic stability. Rice, the country's primary staple, occupies a disproportionately large share of the consumption basket, rendering it both economically indispensable and politically sensitive. Demand for rice is highly inelastic, with income elasticities estimated at 0.1 to 0.3 and price elasticities ranging from 0.2 to 0.5 (Balisacan [1995]; Lantican et al. [2013]; Valera et al. [2022]). In the absence of close substitutes, even modest price increases translate into immediate welfare losses, particularly for poorer households that allocate a larger share of their expenditures to food.

Yet a central puzzle remains: Why have domestic food prices in the Philippines remained high despite declining world prices and tariff reductions? Standard economic reasoning suggests that in a small open economy, lower world prices combined with reduced tariffs should translate into lower domestic prices. However, the Philippine experience indicates that this transmission is far from automatic.

Beyond these direct welfare effects, rice price shocks propagate through the broader economy. Food inflation constitutes a major component of headline inflation in developing countries and often triggers monetary tightening, potentially at the cost of slower economic growth. The policy stakes are therefore substantial, spanning both poverty reduction and macroeconomic management. In response, governments frequently rely on trade liberalization—particularly tariff reductions—as a primary instrument to moderate domestic prices. However, the effectiveness of such interventions ultimately depends on how price changes are transmitted through domestic markets.

The Philippine experience highlights the limits of this approach. Historically, domestic rice prices were elevated by quantitative restrictions (QRs) designed to promote national self-sufficiency. In 2019, these QRs were replaced with a 35 percent tariff on imports, with the expectation that increased import supply would reduce retail prices. While prices did decline following liberalization, the magnitude of the reduction fell short of expectations. Subsequent policy responses have continued to emphasize tariff adjustments as the primary instrument for price stabilization. However, observed outcomes reveal incomplete and asymmetric transmission: retail prices remain downwardly rigid even as landed import costs decline.

This disconnect—tariff cuts without commensurate consumer gains—points to the role of competition and market structure in shaping price outcomes. In well-functioning markets, reductions in import costs are expected to pass through quickly and proportionately to consumers. However, when markets are concentrated or characterized by dominant intermediaries, this transmission may be weakened. Firms along the supply chain may adjust margins in response to cost changes, absorbing part of the gains from lower import prices. In vertically structured markets such as rice—where importers, millers, traders, and retailers mediate transactions—pricing behavior at intermediate stages can significantly influence final retail prices.

Several features of food markets heighten this concern. Low demand elasticity, limited consumer purchasing power, and high product homogeneity reduce competitive pressures and can facilitate coordinated pricing behavior [World Bank and Organisation for Economic Co-operation and Development (OECD) 2017]. At the same time, high concentration among traders or importers, entrenched trading relationships, and information asymmetries may reinforce the position of dominant players. Weak enforcement of competition policy further limits the disciplining effect of entry or oversight. In such an environment, the gains from trade liberalization may be partially captured within the supply chain rather than transmitted to consumers.

This paper examines whether such dynamics are at play in the Philippine rice market. Specifically, we assess the extent to which structural features of the market limit the transmission of tariff reductions and global price changes to domestic retail prices. While conventional explanations emphasize macroeconomic factors—such as exchange rate movements, global price volatility, and inventory adjustments—these factors do not fully account for persistent price rigidity. A competition-policy perspective instead highlights how market structure and firm behavior may dampen or delay price adjustments.

To address this question, we analyze the transmission of shocks across the rice value chain using a Vector Error Correction Model (VECM) and its Structural Vector Autoregressive (SVAR) representation. This framework allows us to quantify and decompose the effects of shocks to landed import costs, wholesale prices, retail prices, farmgate prices, and inventories over the past two decades. Through historical decomposition, we assess the relative importance of these shocks in driving price dynamics.

The empirical strategy enables us to evaluate competing explanations. If markets are functioning competitively, shocks to landed import costs should be the primary driver of price movements across all levels. If, however, structural barriers or pricing power are significant, we expect weaker and asymmetric transmission, with intermediate prices—particularly wholesale prices—playing a more dominant role. Alternatively, if speculative behavior or hoarding is prevalent, inventory shocks should account for a larger share of price variation. By disentangling these channels, the paper provides evidence on whether structural constraints within the market dilute tariff reductions.

This study contributes to policy discussions by highlighting the limits of relying solely on trade liberalization to achieve reductions in consumer prices. It underscores the importance of complementary competition policy measures—such as improving market transparency, reducing barriers to entry, and strengthening enforcement—to ensure that the benefits of lower tariffs are transmitted to households. The findings have direct implications for inflation management, food security, and regulatory design in the Philippines and other developing economies facing similar challenges.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature on trade liberalization, price rigidity, and competition in agricultural markets. Section 3 discusses sectoral realities and the policy context in the Philippines. Section 4 outlines the methodology, followed by the results in Section 5. The final section offers concluding remarks and recommendations.

2. Related literature: trade liberalization, price rigidity, and anticompetitive behavior

Standard international trade theory suggests that tariff reductions lead to lower domestic prices, particularly for tradable goods such as staple foods (Goldberg and Pavcnik [2007]; Feenstra [2015]). The mechanism is straightforward: by lowering the cost of imported goods, liberalized trade enhances market competition, displaces high-cost domestic producers, and ultimately benefits consumers through reduced prices. However, empirical studies provide evidence to the contrary. Domestic prices remain stubbornly high despite declining border prices—a phenomenon commonly referred to as price rigidity due to the incomplete pass-through of tariff reductions.

One strand of the literature points to tariff redundancy, in which the trade effects of tariff changes (at least in the short run) may be diluted. For example, the impact of tariff cuts may be watered down by changes in real exchange rates and world prices [Langhammer 1988]. This can occur if increased import demand in the importing country raises export demand, and foreign producers can capture part of the initial gains from tariff cuts by raising export prices. The distribution of welfare gains between foreign producers and domestic consumers hinges on the relative elasticities of import demand and export supply. These elasticities are influenced by various factors, including the nature of the commodity, import penetration, protective trade measures, supply flexibility, availability of substitutes, and market structure [Kreinin 1961].

Incomplete pass-through is also attributed to various structural and behavioral factors. Imperfect competition can also result in a slow tariff pass-through when dominant market players adjust their markups rather than prices. Burstein et al. [2005] argue that distribution costs and retail markups significantly dilute the transmission of trade shocks to final consumer prices. Similarly, Atkin and Donaldson [2015] show that poor infrastructure, intermediary markups, and weak market integration can hinder spatial price transmission, especially in developing economies. As such, the benefits of trade liberalization do not reach consumers, as retail prices may remain unresponsive to changes in landed import costs.

In the context of food markets, Ravallion [1986] and Baulch [1997] both examine the extent of market integration, underscoring that significant transfer costs or structural frictions can lead to incomplete spatial arbitrage, resulting in persistent price differentials and weak market integration. Baulch [1997], using data from the Philippines, demonstrates that high transfer costs and market segmentation hinder spatial price arbitrage, leading to persistent regional price disparities. This reinforces the view that price rigidity in staple food markets, such as rice, often stems from structural barriers and weak spatial market integration rather than border protection alone. Cole and Eckel [2014] discuss a theoretical model regarding the impact of tariffs within the context of imperfectly competitive market intermediaries between producers and consumers. Their theory suggests that the potential impact of tariffs intensifies with the level of market competition. When structural barriers and transaction costs restrict buyers' ability to choose among market intermediaries, this reinforces the local market power of these intermediaries, enabling them to raise their markups and increase profits. Empirically, limited tariff pass-through was observed in retail prices during the initial wave of tariff increases in the first Trump Administration, as US retailers potentially adjusted profit margins on affected goods in response to the tariffs [Cavallo et al. 2021].

In the case of modern agricultural markets, Sexton [2013] argues that they are increasingly characterized by concentrated market power, particularly among processors, traders, and retailers. This leads to distorted farm-to-market price transmission. Contrary to the common assumption that perfectly competitive agricultural markets are efficient, he demonstrates that market power can result in inefficiencies, price manipulation, and reduced welfare for both producers and consumers.

The effectiveness of trade liberalization is also influenced by the strength of domestic institutions, particularly those responsible for enforcing competition policy. OECD [2013] reports highlight that in the absence of empowered and independent competition authorities, price transmission from tariff reductions remains incomplete. In situations where enforcement is weak or politically compromised, dominant firms can collude or maintain monopolistic pricing without consequences.

The literature shows that tariffs alone are insufficient for lowering consumer prices amid supply chain rigidities, poor infrastructure, and concentrated market power. Price rigidity during liberalization is especially apparent in agricultural markets, where politically connected traders and ineffective regulatory oversight persist.

To this end, we contribute to the emerging literature by investigating why domestic retail rice prices in the Philippines remain elevated even after the reduction in import tariffs. By examining these mechanisms, we seek to clarify the processes through which price rigidity emerges in the shadow of liberalization.

3. Sectoral realities and policy context

3.1. The rice trade liberalization

In February 2019, through Republic Act 11203 or the Rice Tariffication Law (RTL), the government dismantled the QR regime on rice imports and established a tariff system for rice importation. Proponents and development scholars viewed this change as a significant "game changer" for the country's food economy. The decades of high domestic rice prices have been associated with the government's goal of achieving national self-sufficiency. Earlier studies (Roumasset [2000]; Tolentino [2002]; Balisacan and Ravago [2003]; David [2003]; Balisacan and Sebastian [2006]; Clarete [2015]; Briones [2016], among others) show that this policy was costly to society, harming consumer welfare and promoting wasteful rent-seeking activities. Economic growth before 2020 would have been strongly pro-poor had it not been for the misguided set of policy tools chosen to achieve the food self-sufficiency goal [Ravago et al. 2024].

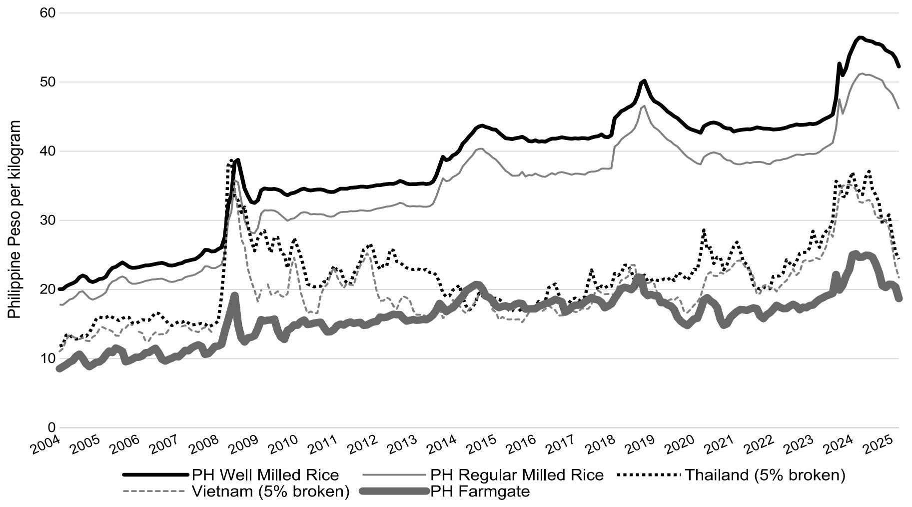
The law sets tariffs at 35 percent for imports from member countries of the Association of Southeast Asian Nations (ASEAN), 40 percent for non-ASEAN countries with imports below 350,000 metric tons, and 180 percent for non-ASEAN countries with imports exceeding 350,000 metric tons. It also significantly reduces National Food Authority's (NFA) functions, restricting it to the procurement and management of buffer stock for emergency purposes. The agency will no longer be allowed to manage the licensing of importers and traders. Moreover, the law allocates ₱10 billion annually to the Rice Competitiveness Enhancement Fund (RCEF), a facility aimed at enhancing farm productivity and competitiveness by providing seed, mechanization, credit, and extension services.

The reforms succeeded in reducing retail prices to ₱38.1 per kilogram (kg) for regular milled rice and ₱42.7 per kg for well-milled rice until the onset of the COVID-19 pandemic in 2020, where retail prices reached a plateau in the range of ₱39 to 40 per kg for regular milled rice and ₱43 to 44 per kg from month to month, year to year. The decline fell short of expectations, with domestic prices remaining higher than world prices, as shown in Figure 1. As a consequence, inflation, particularly for food, remains stubbornly high, with food accounting for more than half of total inflation for most of late 2023 and early 2024 (Figure 2), with rice in particular accounting for 2.0 percentage points of total inflation in May and June of 2024 when inflation hovered at between 3.7 and 3.8 percent.

In response, the government has relied on trade liberalization, particularly through tariff reductions, as a key strategy to further lower domestic prices. Executive Order (EO) No. 62, which took effect in July 2024, lowered the import tariff on rice to 15 percent from 35 percent until 2028 to help tame inflation and protect the purchasing power of Filipinos. Under the EO, the rice tariff is subject to review by the Department of Economy, Planning, and Development (DepDEV)[1] every four months to strike a balance between the welfare of farmers and consumers.

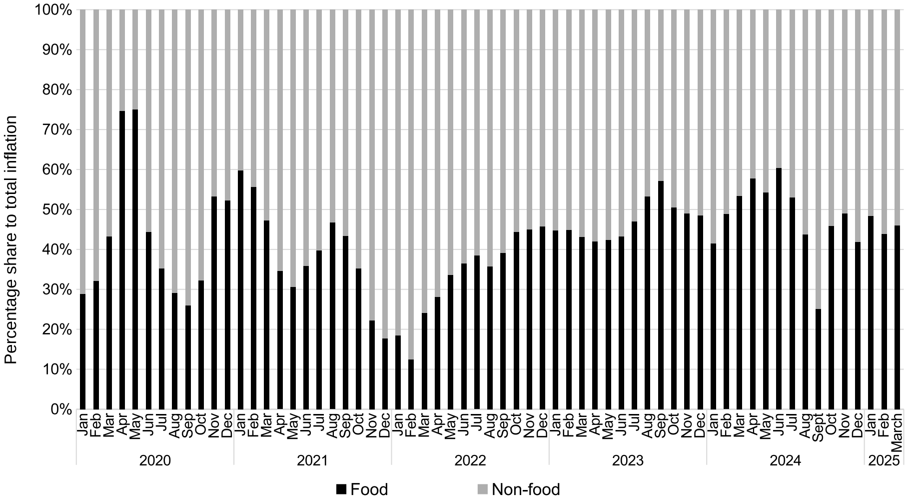
[1] DepDEV is formerly known as the National Economic Development Authority (NEDA).

FIGURE 1. Historical retail prices vs world prices



Source of basic data: Philippine Statistics Authority (PSA) OpenStat Database for domestic prices, World Bank Commodity Price Dataset for International Prices.

FIGURE 2. Food and non-food contribution to inflation



Source of basic data: PSA OpenStat Database.

This action by the government is not without its share of controversy. Farmer and producer groups, as the most adversely affected parties, expressed strong opposition through legal action to stop the law's implementation [Casilao 2024]. They cited procedural lapses, economic harm, and legal challenges and demanded a reversal of the tariffs. Academics generally support the inflation-control intent behind EO 62 but caution that tariff reform alone is insufficient [Inosante 2024].

They urge complementary actions, including streamlined supply chains to ensure the benefits of tariff reductions reach consumers, targeted support for farmers, and long-term investment in productivity-enhancing public goods.

The implementation of EO 62 aimed to mitigate persistently high retail prices and alleviate food inflation. In the months immediately following the order, retail rice prices remained high due to previous supply shocks, delayed import arrivals, and slow market responses. Before the implementation of EO 62, Figure 1 shows rice prices were ₱51.07 per kg for regular milled rice (RMR) and ₱55.96 per kg for well-milled rice (WMR). After seven months, as of January 2025, prices had dropped by about ₱1 to 3 per kg (RMR had fallen to ₱48.25 per kg, while WMR had decreased to ₱54.14 per kg). This indicates that, despite a 20-percentage-point decrease in tariffs, rice prices had only fallen by around 3.25 to 5.52 percent after eight months. In contrast, farmgate prices experienced a significant decline, falling from ₱24.93 to ₱20.72 per kg, a 16.97 percent decrease from June 2024 to January 2025. By late 2024 and into early 2025, retail prices began to stabilize, reflecting the gradual impact of tariff reductions and supportive government interventions. While the trend indicates that EO 62 helped to moderate rice prices, it did not meet the expected price reduction targets.

3.2. What's keeping prices up?

In response to persistently high rice prices despite trade liberalization, the Philippine House of Representatives launched an investigation into potential anti-competitive practices in the rice sector. Through House Resolution No. 254, an ad hoc "Murang Pagkain Supercommittee"[2] was formed to examine allegations of cartel behavior, hoarding, and price manipulation [House of Representatives 19th Congress 2024]. Central to the inquiry was the "permit cornering" scheme involving the NFA between 2016 and 2018, which allegedly allowed a few traders to monopolize rice import permits, resulting in an estimated ₱163.6 billion loss to the economy.

The committee also scrutinized post-EO No. 62 developments, noting that retail prices continued to rise despite a significant drop in landed import costs. Reports of mislabeling and price inflation by retailers raised concerns about collusion. Lawmakers urged the Philippine Competition Commission (PCC) to investigate potential abuse of dominance and price-fixing, while acknowledging the commission's limited institutional capacity. Delays in implementing the Anti-Agricultural Economic Sabotage Act further prompted calls for a multi-agency task force to monitor and penalize unfair practices in the rice value chain. However, this raises the question: if government had already eliminated legislative and bureaucratic non-tariff barriers through the Rice Tariffication Law, why have domestic food prices in the Philippines not fallen despite declining world prices and tariff reductions?

[2] Literally translated, this means "Affordable Food Supercommittee".

One possible factor can be drawn from lessons learned in past crises and the role of behavioral dynamics in agricultural commodity markets, particularly how speculative hoarding can amplify price volatility. A similar sequence of events unfolded during the 2008 rice crisis, in which export bans by major rice-producing countries triggered speculative behavior and a sharp price surge. Timmer [2024] emphasizes the significance of managing speculative behavior in food markets, drawing on the experience of the 2008 rice crisis. He notes that the Philippines undertook stockpiling measures as a precautionary response to rising global prices, which had been increasing gradually in the early 2000's but began accelerating rapidly in late 2007. Exporting countries, such as India and Vietnam, responded by imposing export restrictions, contributing to tighter global supply. This fostered an environment in which widespread anticipation of further price increases led to hoarding and a sudden spike in demand, turning a gradual price buildup into a crisis.

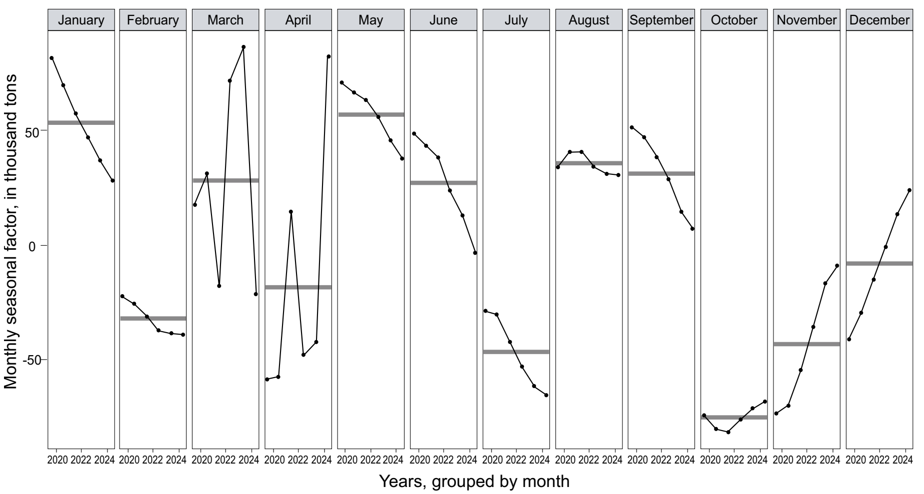
Fast forward to the aftermath of the 2024 experience, evidence from the Philippine Statistics Authority (PSA) import data suggests that speculative dynamics may have changed the timing of annual importation, undermining the intended effects of tariff reforms on import volumes and retail prices. The EO No. 62 provision for tariff reviews every four months—contrasting with the standard one-year duration of executive orders—raises concerns about its effectiveness in shaping long-term market expectations. Though initially intended to give the government the flexibility to adjust the tariff rate during the harvest season, this may have unintentionally encouraged speculative behavior and inventory hoarding. Specifically, the reduced timeline may not align with the contractual and logistical realities of international rice trade, where agreements often extend beyond four months. Consequently, market participants may engage in anticipatory behavior or rent-seeking to obtain privileged information about future tariff adjustments, thereby increasing uncertainty and undermining allocative efficiency.

Figure 3 displays the estimated seasonal components of monthly rice imports after the RTL in 2019, showing how post-RTL import patterns differed from typical seasonal trends. The gray horizontal lines indicate the average seasonal factor for the period, while the black lines are the observed seasonal factors for each year. Based on the data in Figure 3, imports are usually highest in January, May–June, and August–September, and lowest during July and October–November. The peak import season mainly aligns with the harvest season in exporting countries like Vietnam and Thailand, while imports decrease during the last quarter of the year, which overlaps with the main harvest season in the Philippines.

However, this pattern was reversed in 2024 after EO No. 62 was enacted. Instead, imports experienced an early slump from May to September, as seen in the dip in the season factor for 2024 (Figure 3), followed by a late increase from October to December (Figure 4). This shift is probably due to several factors:

speculation about whether tariffs would be imposed given the pending Supreme Court case and traders needing to find storage for imports after commercial stocks peaked before the announcement of EO No. 62 likely caused the initial decline, while importers taking advantage of lower tariffs in case they were reversed during the first scheduled tariff review in November 2024 probably contributed to the later rise. Additionally, in theory, lowering tariffs should lead to a sustained rise in import volumes. However, as shown in Figure 4, the expected drop in imports before the tariff cut nearly offsets the subsequent increase seen in October and November. This results in only a small net change in the overall import trend for the year (indicated by the solid gray line). This pattern suggests that the policy's short-term nature may have encouraged speculative and hoarding behavior rather than fostering competitive and efficient importation.

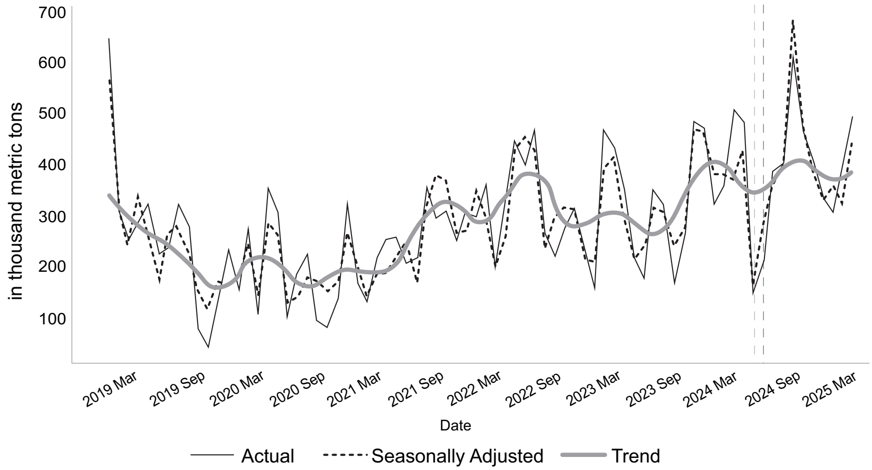
FIGURE 3. Seasonal components of monthly rice imports (2019–2024)



Note: The gray horizontal lines indicate the average seasonal factor for the period. Black lines are the observed seasonal factors for each year.
Source of basic data: PSA OpenStat Database.

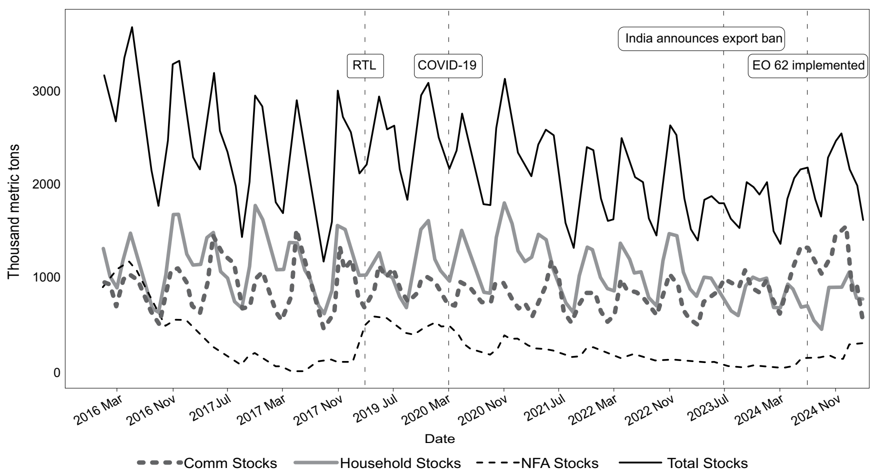
Another key structural constraint could be the logistics and storage sector. Before importers receive a Sanitary and Phytosanitary Import Clearance (SPSIC), they must submit a "Proof of Existence and Authority to Use Storage/Warehouse (if applicable) or a Department of Agriculture (DA) Accredited Cold Storage Warehouse (with DA Certificate of Accreditation)." This requirement is reasonable because it ensures importers have a designated storage for the imported rice and likely prevents frivolous SPSIC filings. However, it also indicates that the country's overall storage capacity for rice imports may act as a logistical limit on the number of importers and the volume of imports at any given time.

FIGURE 4. Trends in import volumes (January 2019–January 2025)



Source of basic data: PSA OpenStat Database.

FIGURE 5. Historical total rice stocks (2017–2025)



Source of basic data: PSA OpenStat Database.

From the Bureau of Customs' import transaction data available since 2021, concentration ratios for the top four and top eight firms have stagnated at around 19 percent and 32 percent, respectively, despite enacted reforms to liberalize imports. Similarly, the Herfindahl-Hirschman Index remained around the 223 to 229 range in the past five years.[3] Looking at PSA's List of Establishments for 2023, data from

[3] However, it should be noted that the import transactions data do not provide sufficiently detailed information on the potential cross-ownership structures of firms. If the largest firms are ultimately controlled by the same set of owners, the concentration ratios may understate the true degree of market concentration.

2021 and 2018 show a significant decrease in dedicated grain warehouses—from 106 in 2018, to 45 in 2021, and only 19 in 2023. This aligns with the downward trend in total rice stocks since 2016 (Figure 5). Another possible factor could be production shocks caused by El Niño and La Niña, which led to unexpected rice shortages. The Department of Agriculture reported a decline of around one to 1.2 million metric tons in rice production due to climate-related phenomena during this period. Lastly, we cannot rule out the possibility that uncertainty surrounding trade policies—both international (such as the Indian export ban) and domestic (including periodic tariff reviews)—may have discouraged market players from stockpiling additional rice.

4. Methods

To examine the drivers of domestic rice price dynamics, we estimate a Vector Error Correction Model (VECM) and its Structural Vector Autoregressive (SVAR) representation. This framework allows us to capture both long-run equilibrium relationships and short-run adjustments among key variables, including retail, wholesale, and farmgate prices, landed import costs, import volumes, and total rice stocks. We compile monthly data from January 2004 to March 2025 (Table 1).

Given that approximately 80 to 90 percent of imports are from Vietnam and Thailand (Figure 6), landed costs are calculated using international rice prices (Vietnam and Thailand, five percent broken), converted to Philippine pesos, and adjusted for prevailing tariff rates. The tariff adjustments incorporated across various EOs are listed in Annex 1. Additional controls include fuel and fertilizer prices, as well as a precipitation anomaly index to capture climate-related shocks.

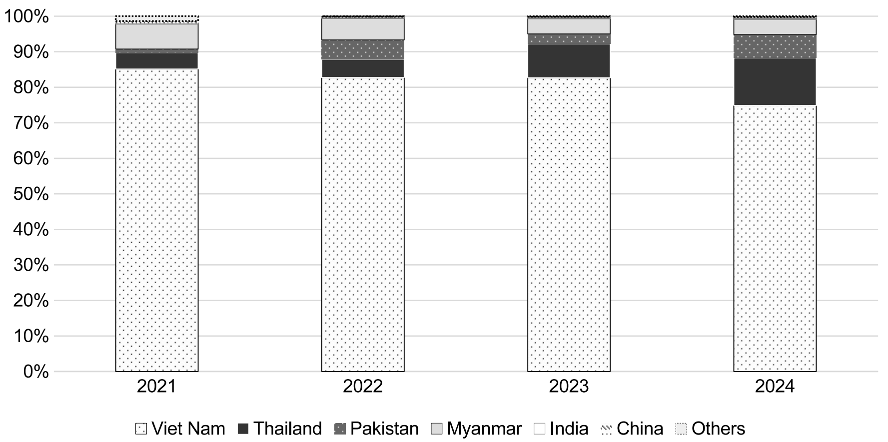
Generally, in a VECM framework, the variables are assumed to be integrated of order one and cointegrated, reflecting both short-term dynamics and long-term equilibrium relationships [Pfaff 2008]. A VECM model is proper if the variables of interest, $Y_t = (y_{1,t}, \dots, y_{K,t})$, are generated by a cointegrated process driven by a common stochastic trend, or some long-run relationship $\beta' Y_t = \beta_1 y_{1,t} + \dots + \beta_K y_{K,t} = z_t$, where z_t is a stationary stochastic variable representing deviations from the long-run equilibrium. This means that some linear combination of the variables is stationary, and the variables move together stably over time. If such a vector β_i exists, then the variables Y_t are cointegrated. If r such β_i vectors exist, we say that Y_t is generated by a cointegrated process with cointegrating rank r, and the matrix $\beta = (\beta_1, \dots, \beta_r)$ is called the cointegrating matrix [Lütkepohl 2005]. The importance of this cointegrated process lies in its ability to model and detect long-run relationships between non-stationary variables through a linear combination of the variables of interest. This linear combination is stationary, which enables us to address the non-stationarity of the individual time series and avoid spurious regressions.

TABLE 1. Summary statistics

Variable	Mean	Median	Max	Min	SD
Regular Milled Retail Price (in ₱/kg)[1]	34.34	36.56	51.25	17.77	8.28
Regular Milled Wholesale Price (in ₱/kg)[2]	31.27	33.37	47.69	16.31	7.34
Other Palay Farmgate Price (in ₱/kg)[3]	16.10	16.71	25.17	8.53	3.57
Volume of Imports (in thousand metric tons)[4]	172.17	154.00	645.98	0.00	142.86
Landed Costs (in ₱/kg)[5]	28.77	27.44	54.16	17.14	6.61
Total Rice Stocks (in thousand metric tons)[6]	2,277.38	2,251.90	3,908.00	1,135.80	546.06
Average Fuel Price (in ₱)[7]	44.84	43.99	85.97	19.36	11.81
Average Fertilizer Price (in ₱)[8]	21.06	18.75	43.99	10.94	6.97
Philippine rice-weighted Estimated Precipitation Anomaly (EPA)[9]	7.49	7.70	15.81	0.96	3.21

Note:
1-4. PSA OpenStat Database for Domestic Rice Prices, Volume of Imports, and Total Rice Stocks
5. Landed Cost was computed from the average of Vietnam and Thailand (five percent broken) international rice prices from the World Bank Commodities Price Dataset converted to Philippine Peso using exchange rate data from the Bangko Sentral ng Pilipinas (BSP).
6. Climate data for the estimated precipitation anomaly was gathered from UN-FAO's Agricultural Stress Index System (ASIS) dataset. To get a national average, each region's EPA was weighted by the contribution of that region to total national palay production.
7. The monthly average fuel price was computed from the average of weekly domestic prices for diesel and unleaded gasoline reported by the Department of Energy
8. The monthly average fertilizer price was computed from the average of domestic prices for urea, ammonium phosphate, complete fertilizer, and ammonium sulfate, using data from the Fertilizer and Pesticide Authority and the PSA's Weekly Cereals and Fertilizer Price Monitoring.
9. Climate data for the estimated precipitation anomaly was gathered from UN-FAO's Agricultural Stress Index System (ASIS) dataset. To get a national average, each region's EPA was weighted by the contribution of that region to total national palay production.

FIGURE 6. Major source countries of the Philippines' rice imports



Source of basic data: Bureau of Customs.

Thus, we first test for stationarity using the Augmented Dickey-Fuller (ADF) test and then test for cointegration using the Johansen trace test to determine the optimal lag length based on the Final Prediction Error (FPE) criterion. If all variables are found to be integrated of order one, $I(1)$, and exhibit cointegration, then the use of a VECM framework is justified.

We model the following VECM to study the relationships between domestic prices at various market levels (wholesale, retail, and farmgate), total rice stocks, import volume, and tariff-adjusted international prices (landed cost) shown in Equation (1):

$$\Delta Y_t = \begin{bmatrix} \Delta Rice\ Stocks \\ \Delta Imports \\ \Delta Wholesale\ Price \\ \Delta Retail\ Price \\ \Delta Farmgate\ Price \\ \Delta Landed\ Cost \end{bmatrix} = \mu + \Gamma_1 \Delta Y_{t\text{-}1} + \ldots + \Gamma_{p\text{-}1} \Delta Y_{t\text{-}p+1} + \Pi Y_{t\text{-}1} + \Psi X_t + \varepsilon_t, \quad (1)$$

where $\Pi = \alpha\beta'$, α is the loading matrix, which determines the speed of adjustment of the variables back to the long run equilibrium, $\Gamma_i = -(\Pi_{i+1} - \ldots - \Pi_p)$ are the $(K \times K)$ short-run coefficient matrices. The matrix X_t includes exogenous variables such as fuel and fertilizer prices, as well as seasonal dummies. A weighted average of the country's Estimated Precipitation Anomaly (EPA), which measures how current rainfall conditions deviate from the long-run average with lower values coinciding with drought periods, was included to take into account the potential impact of climate phenomenon. The optimal lag length p was chosen based on the lag order that would minimize the final prediction error (FPE).

A VECM models the variables in differences and has a VAR representation at the levels in the form of Equation (2):

$$Y_t = \mu + A_1 Y_{t\text{-}1} + \ldots + A_K Y_{t\text{-}p} + \Psi X_t + u_t, \quad (2)$$

where $A_1 = \Pi + I_K + \Gamma_1$, $A_i = \Gamma_i - \Gamma_{i\text{-}1}$, $A_p = \Gamma_{p\text{-}1}$, and $u_t = B\varepsilon_t$. We then use this representation to model a structural VAR to identify shocks through impulse response analysis by using non-sample information to impose restrictions on the B matrix and generate unique impulse response functions. Typically, these restrictions take the form of long-run or short-run restrictions based on economic theory. However, the passage of the RTL provides us with an opportunity to implement a data-driven approach to identifying a unique B matrix and avoid potentially biasing the results of the decomposition depending on the theory adopted. We implement a method proposed by Rigobon [2003] to identify structural shocks through changes in volatility at known points in time. We take advantage of the change in volatility caused by the RTL; in particular imports exhibited much lower volatility post-RTL (Annex 6). Hence, the reduced form covariance matrix takes the form of Equation (3):

$$E(u_t u_t') = \begin{cases} \Sigma_1, for\ t < March\ 2019 \\ \Sigma_2, for\ t > March\ 2019 \end{cases} . \tag{3}$$

Following estimation and identification of the SVAR, we conduct post-estimation dynamic analysis. Specifically, we generate impulse response functions (IRFs) to trace the temporal effects of structural shocks and perform historical decomposition to quantify the contribution of each shock to observed price movements over time, following standard approaches in the SVAR literature (see Kilian [2009]; Hausman et al. [2012]; Jin et al. [2012]; Wang et al. [2014]; and Wang et al. [2022]). IRFs trace the effect of a one-time shock to one variable—such as a sudden increase in wholesale prices—on the behavior of other variables over time, showing both the direction and duration of the response. The IRFs are generated from the coefficient matrices of the moving average representation of the SVAR model. Then, we generate a historical decomposition by mapping a sequence of shocks that replicates the movement of the time series. That is, mapping for each of the variables y_j (i.e., imports, stocks, etc.) and y_k (i.e., retail and farmgate prices) in Y_t, the contribution of a shock in variable j at time t, ε_{jt}, to variable k is given in Equation (4):

$$Y_t = \Phi^t Y_0 + \sum_{i=0}^{t-1} \Phi_{kj}^i B\varepsilon_{j,t-i} . \tag{4}$$

We use historical decomposition to assess the sources of price rigidities in retail and farmgate rice markets. Under perfectly competitive market conditions, shocks to landed costs should be the primary drivers of price fluctuations at both the retail and farmgate levels, consistent with the law of one price. In the historical decomposition, this would be reflected by landed-cost shocks contributing the largest share of price movements. However, if structural barriers impede price transmission, import shocks may account for a larger share of changes in retail and farmgate prices. If speculative behavior or hoarding is prevalent, shocks to rice stocks may emerge as the dominant drivers of price movements. Conversely, if market intermediaries possess sufficient market power to influence profit margins, shocks originating from wholesale and retail prices should play a larger role in explaining changes in retail and wholesale prices.

For robustness checks, we use a Chow test to identify potential breakpoints in the import time series caused by liberalization reforms. We compute the F-statistics for all possible breakpoints in the series, and the findings are shown in Annex 7. The Chow test results indicate a potential breakpoint in May 2018, where the F-statistic peaks; therefore, we set the structural break in May 2018 and proceed to generate the IRFs and historical decomposition.

5. Results and discussion

5.1. Model diagnostics and specification

The ADF test in Table 2 indicates that all variables have unit roots and are non-stationary in their level form but become stationary upon first differencing. By identifying whether variables require transformation before modeling, the ADF test ensures that the analysis yields meaningful and reliable results, especially when used to inform policy decisions or to understand macroeconomic trends. Since the results show that the variables are integrated of order one, $I(1)$, we proceed with the Johansen test to examine whether the variables are cointegrated.

TABLE 2. Augmented Dickey Fuller unit root tests

Variable	Deterministic Terms	Lags	Test Value	Critical Values		
				1%	5%	10%
Farmgate	Constant, Trend	12	-2.09	-3.98	-3.42	-3.13
ΔFarmgate	Constant	11	-4.40	-3.98	-3.42	-3.13
Wholesale	Constant, Trend	2	-2.76	-3.98	-3.42	-3.13
ΔWholesale	Constant	5	-8.07	-3.44	-2.87	-2.57
Retail	Constant, Trend	3	-2.58	-3.98	-3.42	-3.13
ΔRetail	Constant	4	-8.28	-3.44	-2.87	-2.57
Imports	Constant, Trend	11	-1.44	-3.98	-3.42	-3.13
ΔImports	Constant	10	-9.14	-3.44	-2.87	-2.57
Stocks	Constant, Trend	12	-3.49	-3.98	-3.42	-3.13
ΔStocks	Constant	11	-3.60	-3.44	-2.87	-2.57

Testing for cointegration, we compute the trace statistic for each null hypothesis from $H_0 : r = 0$, that there is no cointegrating relation, up to $H_0 : r \leq 5$, that there are less than five cointegration relations. We reject the null hypothesis if the trace statistic is greater than the critical value. The trace statistic indicates that the hypothesis of no-cointegration and there being at most one cointegrating relationship can be rejected at the one percent level of significance as shown in Annexes 3 and 4. However, we cannot reject the null hypothesis that there are at most two ranks of cointegration at the one percent level of significance. After comparing the post-diagnostics tests between $r = 1$ and $r = 2$, the model with one cointegrating rank adequately addresses the issue of serial correlation. Hence, we proceed with a VECM model with cointegrating rank $r = 1$. In order to get the optimal lag order p, we compute the FPE of the model across $p = 1,\ldots, 12$ lags, and we get the lag order that minimizes the FPE (i.e., $p = 5$, see Annex 5). The results of the VECM regressions are presented in Annex 2.

5.2. Long-run relationships and price transmission

The estimated cointegrating relationships indicate a weak transmission of international price movements to domestic rice markets. Normalizing on landed costs, the results suggest that a one percent increase in landed import costs leads to only a 0.08 to 0.09 percent increase in retail and farmgate prices. This limited pass-through provides initial evidence of price rigidity, indicating that domestic prices do not fully adjust to changes in global market conditions.

This finding is inconsistent with the predictions of standard trade theory in competitive markets, where price changes at the border are expected to be transmitted more strongly along the supply chain. Instead, the results point to frictions or distortions that dampen this transmission.

$$\begin{aligned} &\textit{Landed Cost} - \underset{(0.16)}{3.22}\ \textit{Rice Stock} - \underset{(1.31)}{0.83}\ \textit{Imports} + \underset{(0.03)}{0.63}\ \textit{WS} \\ &\textit{Price} + \underset{(0.45)}{10.47}\ \textit{Retail Price} - \underset{(0.49)}{11.11}\ \textit{Farmgate Price} = 0 \end{aligned} \tag{5}$$

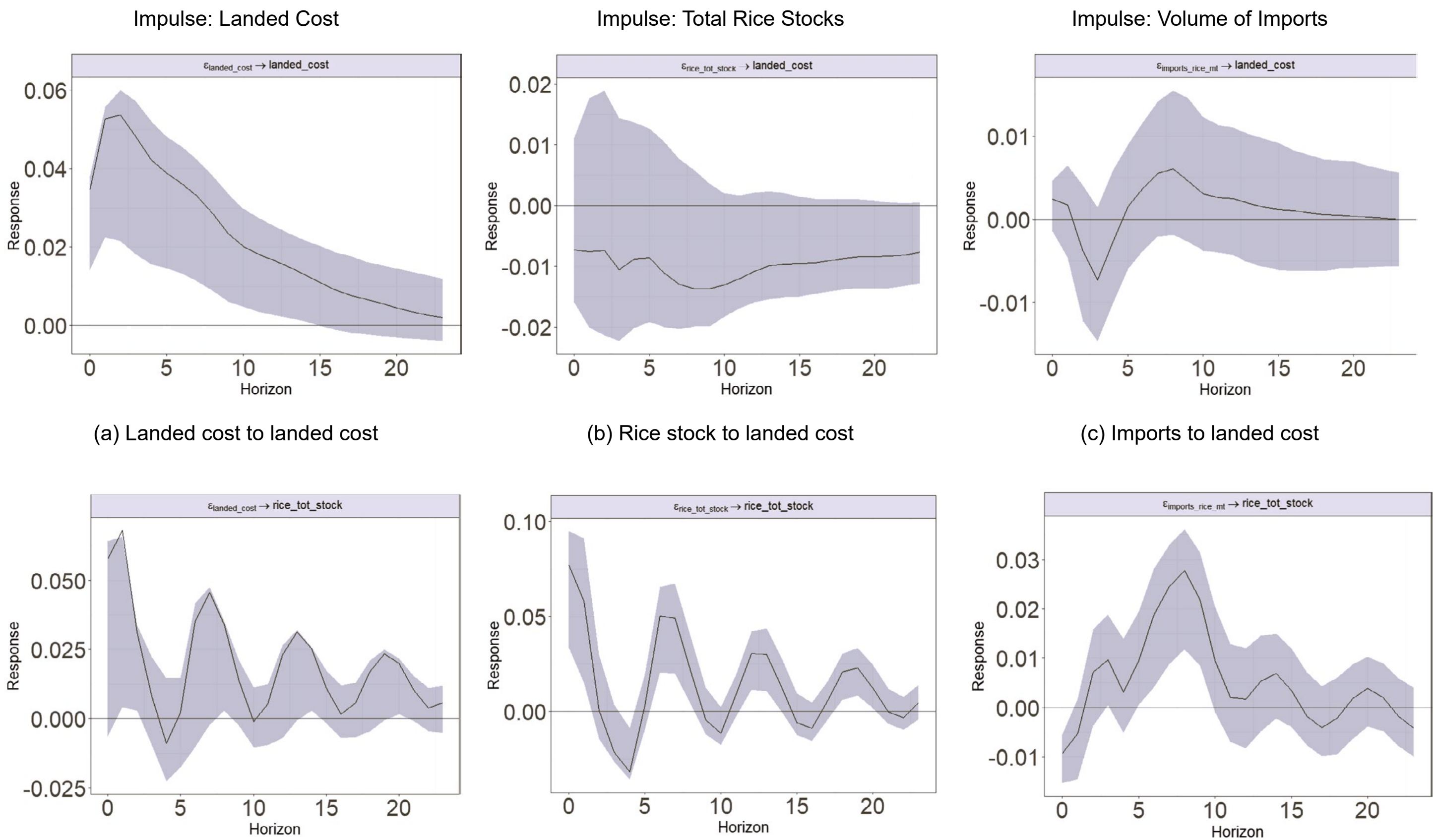
5.3. Impulse response analysis

Figures 7 and 8 present the impulse response functions (IRFs), which trace the dynamic effects of structural shocks across the rice value chain. The first row shows the response of international prices (landed cost), the second row displays the response of total rice stocks, the third row presents the response of imports, and the bottom three rows illustrate the responses in the wholesale, retail, and farmgate markets.

The first column depicts the impulse response to a shock in landed cost (Figure 7). Shocks to landed costs generate positive but relatively modest and short-lived increases in domestic prices at the wholesale, retail, and farmgate levels (Panels j, m, and p). The muted response confirms incomplete pass-through and suggests that international price movements are not the primary driver of domestic price dynamics. In contrast, in the third column, shocks to domestic supply conditions—particularly imports—produce larger and more persistent effects. A positive shock to imports leads to sustained declines in prices across all market levels (Panels l, o, and r). These findings highlight the central role of domestic supply adjustments in shaping price outcomes.

Notably, shocks originating from within the domestic supply chain (Figure 8)—especially wholesale (Panels j, m, p) and farmgate prices (Panels l, o, r)—also have strong and persistent effects on both retail and farmgate prices. This suggests that price formation is influenced more by internal market dynamics than by external cost conditions. Taken together, the IRFs indicate that domestic price movements are more responsive to supply-side constraints and intermediary behavior than to changes in landed import costs.

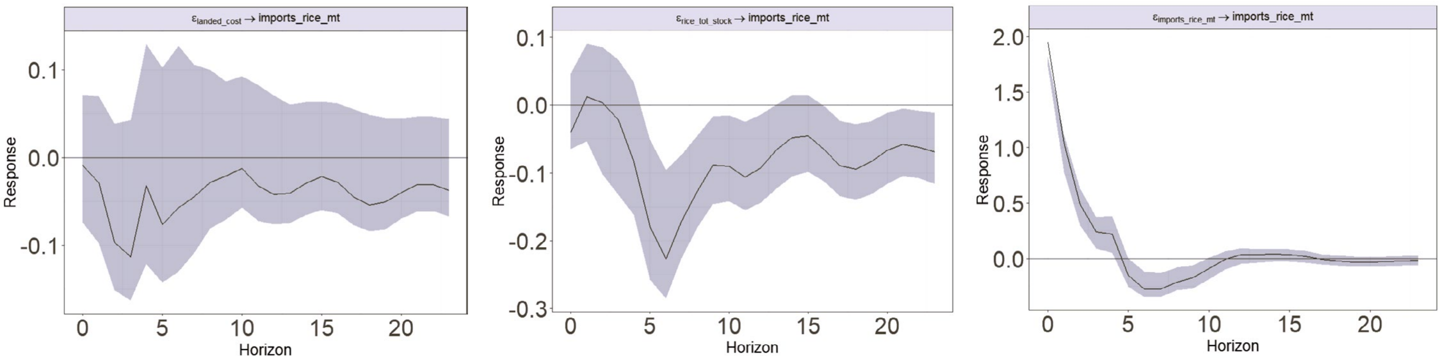
FIGURE 7. Impulse Response Functions for landed costs, total stocks, and imports



(a) Landed cost to landed cost
(b) Rice stock to landed cost
(c) Imports to landed cost
(d) Landed cost to rice stock
(e) Rice stock to rice stock
(f) Imports to rice stock

FIGURE 7. Impulse Response Functions for landed costs, total stocks, and imports (continued)

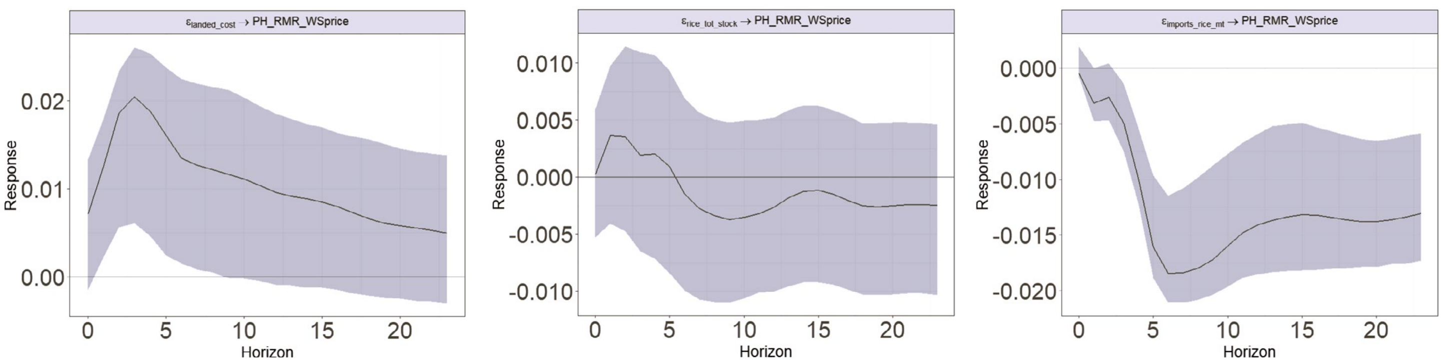
Impulse: Landed Cost | Impulse: Total Rice Stocks | Impulse: Volume of Imports



(g) Landed cost to imports

(h) Rice stock to imports

(i) Imports to imports



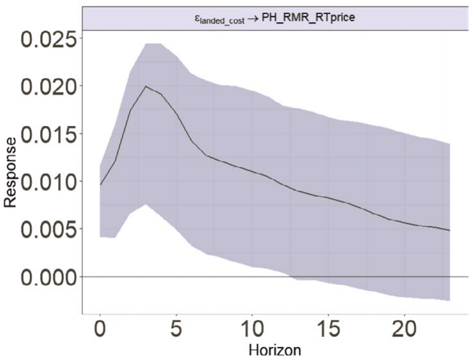
(j) Landed cost to wholesale price

(k) Rice stock to wholesale price

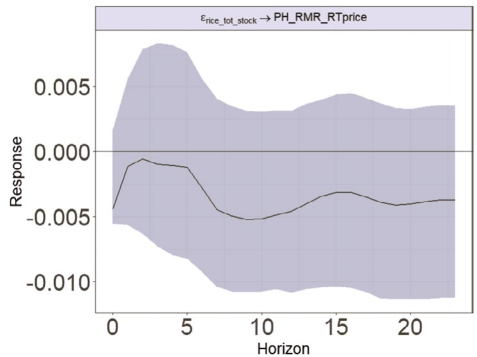
(l) Imports to wholesale price

FIGURE 7. Impulse Response Functions for landed costs, total stocks, and imports (continued)

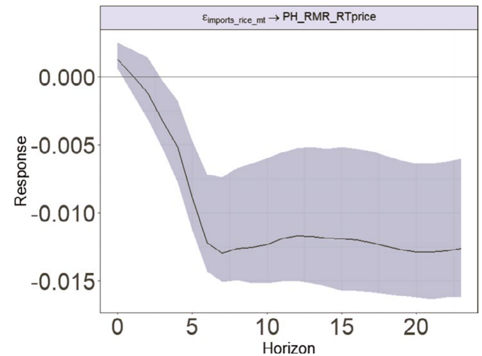
Impulse: Landed Cost | Impulse: Total Rice Stocks | Impulse: Volume of Imports



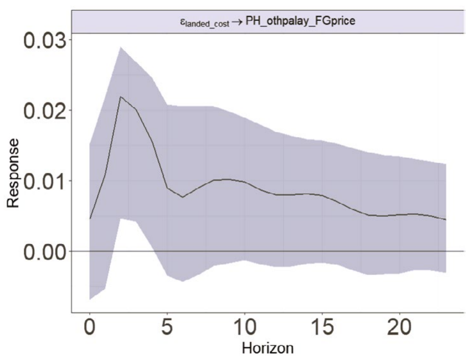
(m) Landed cost to retail price



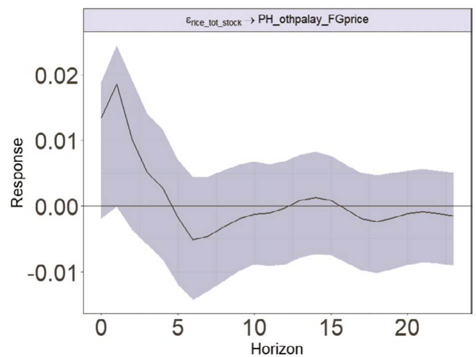
(n) Rice stock to retail price



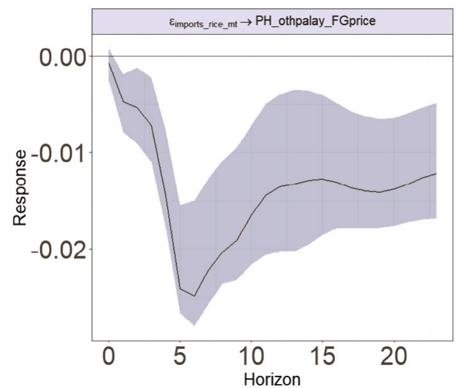
(o) Imports to retail price



(p) Landed cost to farmgate price

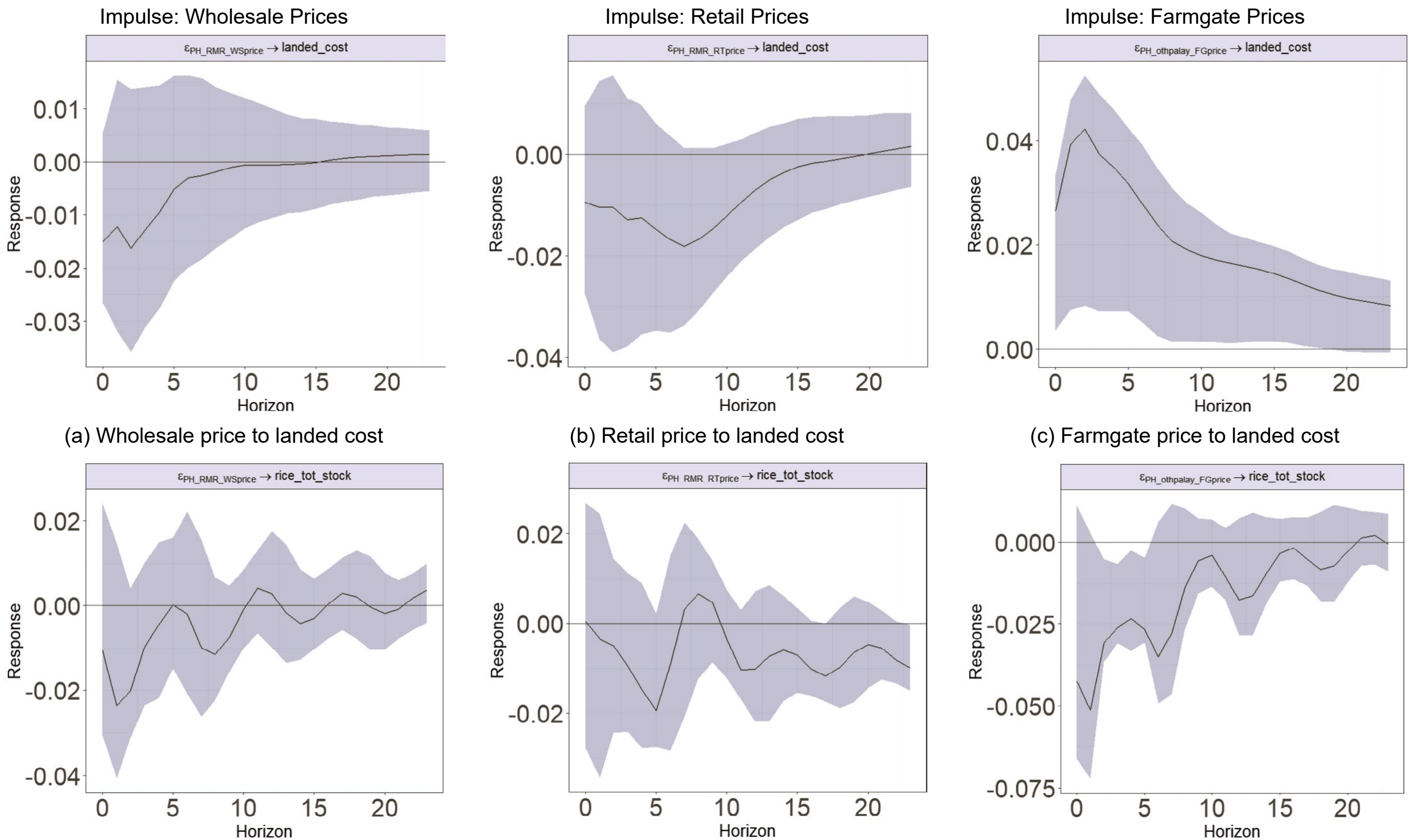


(q) Rice stock to farmgate price



(r) Imports to farmgate price

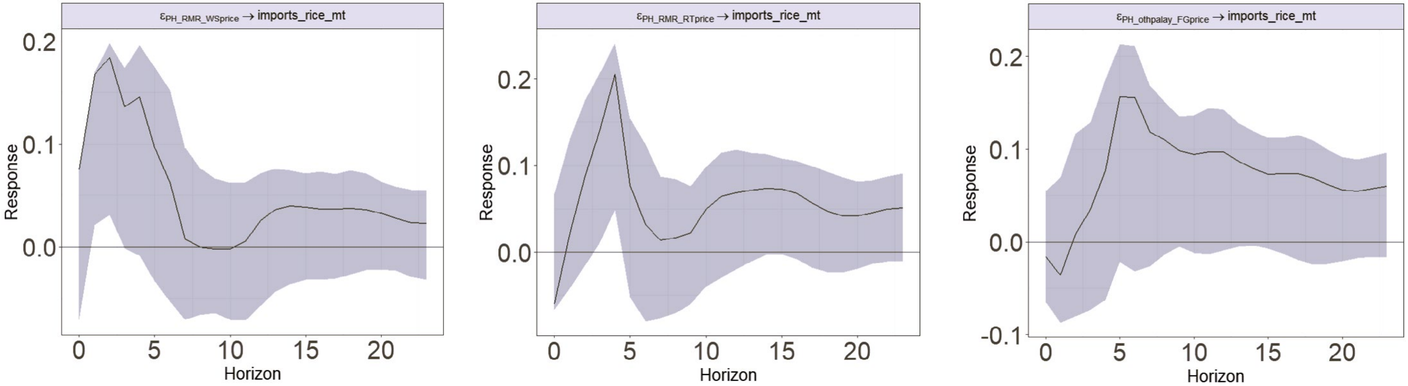
FIGURE 8. Impulse Response Functions for wholesale, retail, and farmgate prices



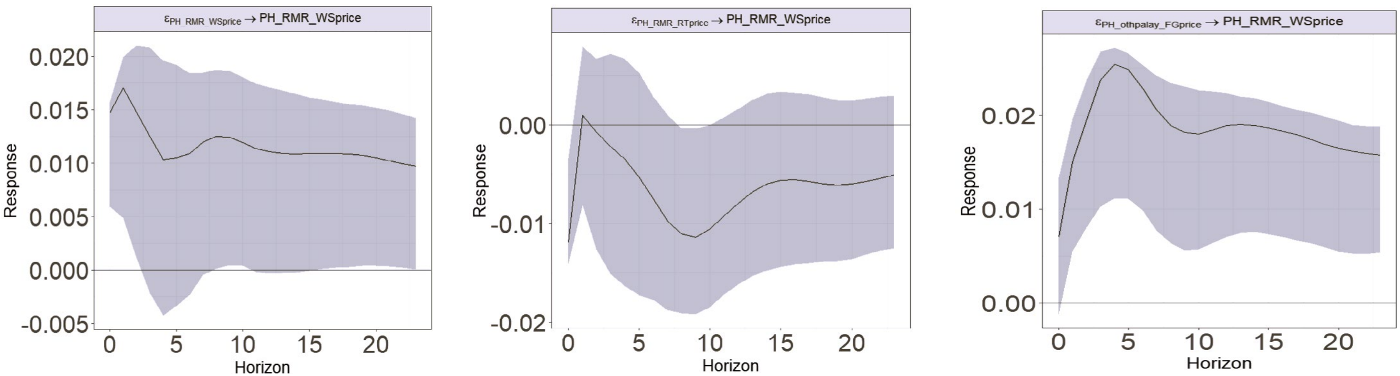
(a) Wholesale price to landed cost (b) Retail price to landed cost (c) Farmgate price to landed cost

(d) Wholesale price to rice stock (e) Retail price to rice stock (f) Farmgate price to rice stock

FIGURE 8. Impulse Response Functions for wholesale, retail, and farmgate prices (continued)

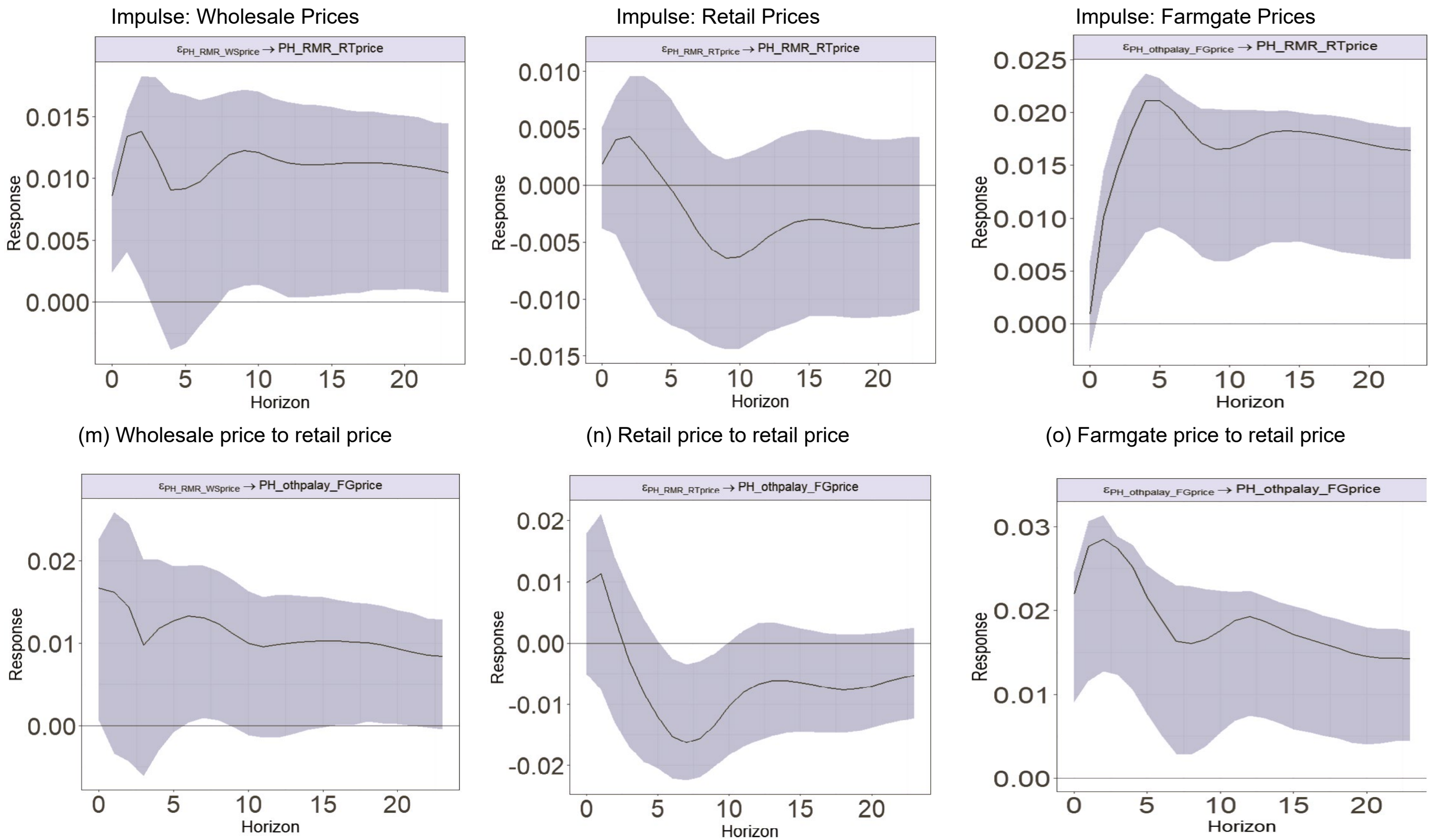


(g) Wholesale price to imports (h) Retail price to imports (i) Farmgate price to imports



(j) Wholesale price to wholesale price (k) Retail price to wholesale price (l) Farmgate price to wholesale price

FIGURE 8. Impulse Response Functions for wholesale, retail, and farmgate prices (continued)



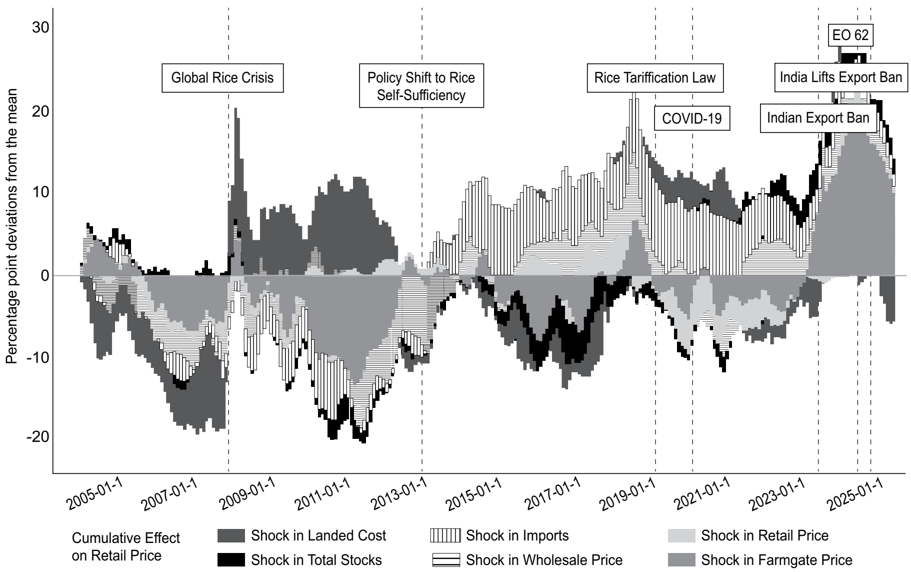
(m) Wholesale price to retail price (n) Retail price to retail price (o) Farmgate price to retail price

(p) Wholesale price to farmgate price (q) Retail price to farmgate price (r) Farmgate price to farmgate price

5.4. Historical decomposition

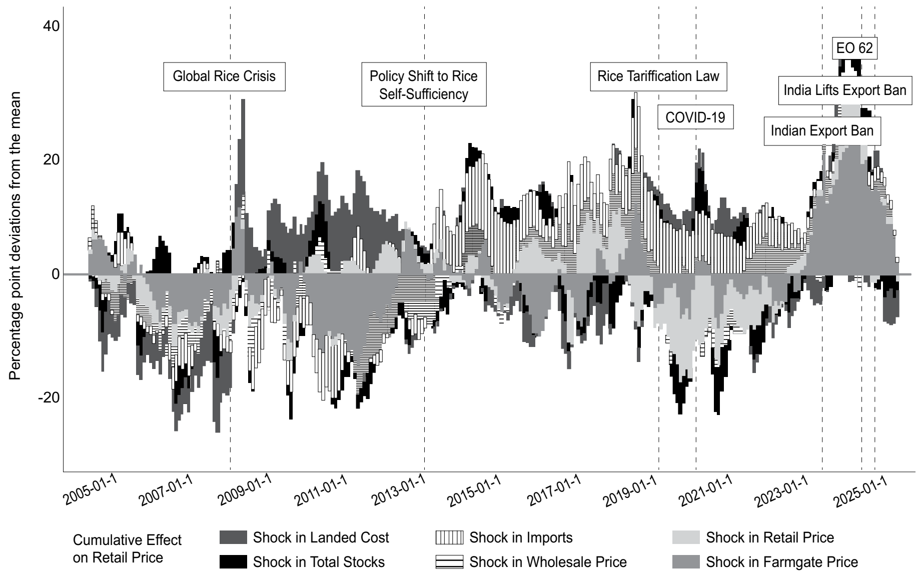
To further examine the sources of price fluctuations, we analyze the historical decomposition of retail and farmgate prices. This approach allows us to quantify the contribution of different structural shocks over time. Figures 9 and 10 present these decompositions for retail and farmgate prices, respectively, providing insight into the key drivers behind price fluctuations over the study period. The vertical axis plots percentage-point deviations from the long-run unconditional mean of the series. Positive vertical bars indicate that a variable contributes to an inflationary pressure on domestic prices, while negative vertical bars indicate that the variable contributes to a deflationary pressure on domestic prices.

FIGURE 9. Historical decompositions for retail prices



The historical decomposition of domestic rice prices closely aligns with the trend in import volumes, driven by trade policy decisions made by various administrations (see Annex 6). For example, during the 2008 Rice Crisis, when rice prices rose more than 20 percent above their long-term average, the Philippines responded by importing over two million metric tons of rice between 2008 and 2013. Recall that the IRFs show that a positive shock in imports tends to lower domestic prices (Figure 7, Panels l, o, and r). As shown in Figure 9, rice importation (represented by the vertical white bars) played a key role in preventing retail prices from rising further. Specifically, imports helped offset upward pressure from rising landed costs (dark gray bars) following the 2008 crisis. This underscores the critical role of timely import policies as a tool for stabilizing domestic food prices during periods of global price volatility.

FIGURE 10. Historical decompositions for farmgate prices



In response to concerns about the negative impact of import dependence on domestic farmgate prices, the Philippine government adjusted its strategy around the beginning of 2013, pursuing rice self-sufficiency by imposing quantitative import restrictions enforced by the NFA. As a result of these protectionist policies, adverse shocks to imports began to put upward pressure on retail and farmgate prices, and the decomposition showed that positive shocks to wholesale (horizontal striped bar in Figures 9 and 10) and farmgate prices (mid gray bars in Figures 9 and 10) also played a major role in raising domestic rice prices leading into 2018. However, favorable dynamics in total rice stocks and landed costs helped ease inflationary pressures stemming from trade restrictions. The historical decomposition indicates that positive shocks in total rice stocks lowered retail prices, peaking around late 2016 to early 2017, when they contributed to a reduction of 5.87 to 6.07 percentage points in retail prices (black bars in Figure 9). At the same time, negative shocks in landed costs from falling world prices (see Figure 1) contributed to a reduction of approximately 3.35 to 4.66 percentage points in retail prices (see the dark gray bars in Figure 9). These favorable dynamics did not last; from around 2018 to early 2019, the deflationary impact of landed costs and total rice stocks began to diminish, falling to 0.13 to 1.14 percentage points (dark gray bars in Figure 9) and 0.05 to 1.55 percentage points (black bars in Figure 9), respectively. Combined with sudden adverse shocks in imports and positive shocks in domestic prices, rice prices began to rise rapidly above the long-term average. This period of rice inflation spurred the passage of the Rice Tariffication Law, an effort to strengthen competition among domestic producers by removing quantitative import restrictions.

Interestingly, based on the results of the historical decomposition, the shortfall in imports continued to drive above-average retail (vertical white bars in Figure 9) and farmgate prices (vertical white bars in Figure 10) despite reforms initiated by the RTL. Several factors could have limited imports during the post-RTL period from 2019 to 2023, including climate phenomena such as El Niño and La Niña, as well as disruptions from the COVID-19 pandemic, which may have restricted access to rice supply from international markets. Similarly, multiple reports indicate that the Sanitary and Phytosanitary Import Clearance (SPSIC) was used to block the entry of rice imports, bypassing the liberalization reforms enacted by the RTL [Office of the United States Foreign Trade Representative 2024].

After 2023, the distortionary effects of import shocks have diminished post-implementation of the RTL, from contributing to a seven to ten percent percentage point increase during past rice crises pre-RTL to only an additional one to three percent percentage point increase in the recent crisis. But alarmingly, shortfalls in total stocks and shocks to farmgate prices played a more significant role in the recent 2023-2024 Rice Crisis. The historical decomposition in Figure 9 shows that negative shocks to imports and total rice stocks, as well as positive shocks in farmgate prices, caused retail prices to rise by an additional 26.82 percentage points (the sum of the black, vertical white, and medium gray bars in Figure 9) around the peak of the crisis, in mid-2024, just before the enactment of EO No. 62.

The robustness check results are displayed in Annex 8 and 9. These findings are consistent with the base model, but shocks to total rice stocks have a more significant impact. The historical decomposition in Annex 9 shows that negative shocks to imports and total rice stocks caused retail prices to rise by an additional 20.55 percentage points (the sum of the black and white bars in Annex 9) around the peak of the crisis, in mid-2024, just before the enactment of EO No. 62. Had these shocks not occurred, the crisis would have been limited to only a 10.70 percentage point deviation from the unconditional mean, rather than the historically high 31.25 percentage point deviation seen in the market.

5.5. Evidence of structural rigidities

Taken together, the results point to a consistent pattern: domestic rice prices in the Philippines are only weakly linked to international prices and are instead driven primarily by internal market conditions.

The limited pass-through of landed costs, combined with the strong influence of wholesale prices, inventory shocks, and import dynamics, suggests structural rigidities in the rice market. These may arise from logistical constraints, such as limited storage capacity, as well as from market structure issues, including concentration among traders and weak competitive pressures.

The prominence of wholesale price shocks is particularly indicative of the role of intermediaries in shaping price dynamics. If market intermediaries can adjust margins or influence supply conditions, they can weaken the transmission of cost reductions to consumers.

Similarly, the significant role of stock-related shocks points to inefficiencies in inventory management and possible speculative behavior, which can amplify price volatility and delay adjustment to favorable supply conditions.

These findings help explain why tariff reductions have not translated into sustained consumer gains. While trade liberalization has reduced border prices, the benefits have not been fully passed through to retail markets. Instead, domestic supply constraints and market structure appear to mediate price transmission. In this context, tariff policy alone is insufficient to ensure lower consumer prices. Without addressing underlying structural and competitive constraints, reductions in import costs may continue to yield only limited and delayed benefits for consumers.

6. Concluding remarks

This paper set out to explain why domestic rice prices in the Philippines have remained high despite declining global prices and the liberalization of rice trade under the Rice Tariffication Law (RTL). Using a Structural Vector Autoregressive (SVAR) framework and historical decomposition, we traced the cumulative effects of shocks to key variables—including imports, total rice stocks, landed costs, and domestic prices—over the past two decades.

Our findings indicate that while the influence of import-related shocks has weakened in the post-RTL period—albeit with some delay—domestic price volatility persists. This persistence is driven largely by shocks to total rice stocks, pointing to continuing weaknesses in domestic supply chains. Constraints such as inadequate storage infrastructure, fragmented logistics, and weak inventory management systems continue to generate supply disruptions that undermine price stability.

More importantly, the results point to a deeper and more persistent constraint: limited market competition. Despite increased importation and declining landed costs, the pass-through to retail prices remains minimal and delayed. This directly addresses the central question of the paper—why tariff reductions have not translated into sustained consumer gains. Historical decomposition shows that shocks to imports, stocks, and farmgate prices continue to dominate price dynamics, suggesting that adjustments along the supply chain are neither smooth nor fully competitive.

These patterns are consistent with a market environment where limited contestability and the presence of dominant intermediaries weaken price transmission. Practices such as hoarding, strategic inventory management, or coordinated behavior among traders may allow market participants to retain gains from lower import costs rather than pass them on to consumers. In this context, trade liberalization alone is insufficient: when market structure enables the exercise of pricing power, policy-induced cost reductions do not automatically translate into lower retail prices.

Policy uncertainty may further exacerbate these outcomes. Frequent adjustments in tariff rates or discretionary import decisions can create incentives for speculative behavior, reduce transparency, and amplify information asymmetries as well as market distortions. As a result, the benefits of RTL risk unequal distribution, favoring larger, better-positioned market participants while leaving consumers, particularly poorer households, exposed to persistently high food prices.

Addressing these challenges requires a broader policy response that goes beyond trade liberalization. Strengthening competition and market governance is essential. This includes enhancing the Philippine Competition Commission's capacity to detect, investigate, and prosecute anti-competitive practices using evidence that meets judicial standards. Improving transparency in rice markets—particularly through better monitoring and public reporting of inventory levels across both public and private sectors—can reduce information asymmetries, discourage speculative behavior, and support more timely policy interventions. Existing data systems of the NFA and the PSA can be further developed for this purpose.

At the same time, continued investment in storage, logistics, and distribution infrastructure remains critical to addressing supply-side inefficiencies. Allocating RTL funds to modernize storage facilities and improve supply chain connectivity—especially in remote rice-producing areas—can help stabilize inventories and reduce localized supply shocks. Complementing these efforts with clear, rules-based trade policies is equally important. Transparent and predictable tariff and import regimes can reduce uncertainty, limit opportunities for arbitrage, and support more efficient market functioning. Where seasonal tariff adjustments are used, they should follow pre-announced, rule-based frameworks to minimize policy-induced volatility.

Ultimately, the findings point to a broader conclusion: stabilizing food prices requires more than opening markets—it requires making markets work. Consistent with Ravago et al. [2024], effective price stabilization depends on a comprehensive reform agenda that strengthens institutions, improves infrastructure, and, crucially, promotes genuine competition in the rice sector. Without these complementary measures, tariff reductions alone are unlikely to deliver sustained and equitable gains for consumers.

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Annexes

ANNEX 1. Rice tariff adjustments implemented in the study

Executive Order No.	Periods covered in the study	MFN tariff rate for ASEAN and in-quota
264(s. 2003)	January 2004 to December 2005	50
574(s. 2006)	January 2006 to June 2007	50
627(s. 2007)	July 2007 to December 2014	40
894 (s. 2010)	Superseded by EO No. 71(s. 2012)	-
61(s. 2011)	January 2011 to December 2014	40
71(s. 2012)	January 2015 to September 2015	50
190 (s. 2015)	November 2015 to April 2017	35
23(s. 2017)	May 2017 to February 2019	35
	March 2019 to May 2021	35
135(s. 2021)	June 2021 to June 2022	35
171(s. 2022)	July 2022 to December 2023	35
10(s. 2023)	January 2023 to December 2023	35
50(s. 2023)	January 2024 to June 2024	35
62(s. 2024)	July 2024 to March 2025	15

Source: Tariff Commission List of Executive Orders.

ANNEX 2. VECM regressions summary table

Term	Δln*In* (*Landed Cost*)	Δln*In*(*Stocks*)	Δln*In*(*Imports*)	Δln*In* (*Wholesale PHP*)	Δln*In* (*Retail PHP*)	Δln*In* (*Farmgate PHP*)
ect1	-0.003	-0.009	0.774***	0.005***	0.000	0.007***
	(0.004)	(0.006)	(0.107)	(0.002)	(0.001)	(0.003)
constant	0.008	-0.017	-0.11	0.002	0.003	0.000
	(0.01)	(0.016)	(0.279)	(0.004)	(0.003)	(0.007)
PH rice weighted EPA	0.38***	-0.141	1.77	0.017	0.015	0.028
	(0.109)	(0.181)	(3.194)	(0.048)	(0.032)	(0.075)
*Δ*ln *In*(*Fertilizer Prices*)$_{t}$	-0.062	-0.011	1.574	0.082**	0.046**	-0.016
	(0.074)	(0.123)	(2.178)	(0.032)	(0.022)	(0.051)
*Δ*ln *In*(*Fuel Prices*)$_{t}$	-0.23**	0.27	0.259	-0.081*	-0.046	-0.08
	(0.105)	(0.175)	(3.087)	(0.046)	(0.031)	(0.073)
*Δ*ln *In*(*Fertilizer Prices*)$_{t-4}$	0.099	-0.267**	2.039	0.006	0.035	0.101*
	(0.075)	(0.124)	(2.186)	(0.033)	(0.022)	(0.051)
*Δ*ln *In*(*Fuel Prices*)$_{t-4}$	0.009	-0.008	-0.231	-0.002	-0.002	-0.006
	(0.01)	(0.016)	(0.285)	(0.004)	(0.003)	(0.007)
PH rice weighted EPA$_{t-5}$	-0.031	-0.1**	-1.626**	-0.029***	-0.009	-0.032*
	(0.024)	(0.04)	(0.713)	(0.011)	(0.007)	(0.017)
sd1	-0.043	-0.106*	-0.217	-0.035**	-0.011	-0.061***
	(0.034)	(0.056)	(0.981)	(0.015)	(0.01)	(0.023)
sd2	-0.005	-0.103*	0.04	-0.025*	-0.007	-0.06***
	(0.033)	(0.054)	(0.96)	(0.014)	(0.01)	(0.023)
sd3	0.021	0.11**	0.326	-0.009	0.002	-0.035*
	(0.028)	(0.047)	(0.822)	(0.012)	(0.008)	(0.019)
sd4	-0.001	0.038	0.458	-0.022**	-0.01	-0.024
	(0.022)	(0.037)	(0.65)	(0.01)	(0.007)	(0.015)
sd5	-0.004	-0.093**	-0.313	-0.019*	-0.011*	-0.023
	(0.022)	(0.036)	(0.642)	(0.01)	(0.006)	(0.015)

ANNEX 2. VECM regressions summary table (continued)

Term	ΔlnIn (Landed Cost)	ΔlnIn(Stocks)	ΔlnIn(Imports)	ΔlnIn (Wholesale PHP)	ΔlnIn (Retail PHP)	ΔlnIn (Farmgate PHP)
sd6	-0.05 (0.03)	-0.061 (0.05)	-0.75 (0.883)	-0.026* (0.013)	-0.02** (0.009)	-0.072*** (0.021)
sd7	-0.012 (0.033)	-0.191*** (0.055)	0.181 (0.964)	-0.007 (0.014)	-0.004 (0.01)	-0.078*** (0.023)
sd8	0.005 (0.033)	-0.205*** (0.054)	0.298 (0.952)	-0.008 (0.014)	0.002 (0.01)	-0.1*** (0.022)
sd9	0.007 (0.031)	0.097* (0.051)	-0.369 (0.904)	-0.006 (0.013)	-0.002 (0.009)	-0.064*** (0.021)
sd10	0.035 (0.023)	0.206*** (0.037)	-0.174 (0.66)	-0.003 (0.01)	0.007 (0.007)	-0.025 (0.016)
sd11	0.331*** (0.074)	0.153 (0.122)	-3.959* (2.162)	0.04 (0.032)	0.038* (0.022)	0.123** (0.051)
*Δ*ln *In*(*Landed Cost*)$_{t-1}$	0.003 (0.043)	-0.118* (0.071)	2.172* (1.26)	0.02 (0.019)	0.000 (0.013)	-0.015 (0.03)
*Δ*ln *In*(*Rice Stocks*)$_{t-1}$	-0.004 (0.003)	-0.004 (0.005)	0.161* (0.086)	0.003** (0.001)	0.000 (0.001)	0.003* (0.002)
*Δ*ln *In*(*Imports*)$_{t-1}$	-0.057 (0.201)	-0.113 (0.333)	3.138 (5.884)	-0.694*** (0.088)	-0.019 (0.059)	-0.114 (0.138)
*Δ*ln *In*(*Wholesale PHP*)$_{t-1}$	0.336 (0.287)	0.947** (0.476)	1.182 (8.403)	0.631*** (0.125)	0.055 (0.084)	-0.129 (0.198)
*Δ*ln *In*(*Retail PHP*)$_{t-1}$	0.29** (0.114)	-0.788*** (0.188)	7.613** (3.325)	0.54*** (0.05)	0.351*** (0.033)	0.292*** (0.078)
*Δ*ln *In*(*Farmgate PHP*)$_{t-1}$	-0.033 (0.073)	0.014 (0.121)	-0.789 (2.144)	0.088*** (0.032)	0.051** (0.022)	0.147*** (0.05)
*Δ*ln *In*(*Landed Cost*)$_{t-2}$	0.027 (0.043)	-0.218*** (0.071)	3.011** (1.255)	0.03 (0.019)	0.01 (0.013)	-0.006 (0.03)

ANNEX 2. VECM regressions summary table (continued)

Term	ΔIn*In* (*Landed Cost*)	ΔIn*In*(*Stocks*)	ΔIn*In*(*Imports*)	ΔIn*In* (*Wholesale PHP*)	ΔIn*In* (*Retail PHP*)	ΔIn*In* (*Farmgate PHP*)
Δln *In*(*Rice Stocks*)$_{t-2}$	-0.004*	-0.005	0.187**	0.004***	0.001	0.004**
	(0.003)	(0.005)	(0.08)	(0.001)	(0.001)	(0.002)
Δln *In*(*Imports*)$_{t-2}$	-0.169	-0.453	3.769	-0.387***	-0.012	0.065
	(0.228)	(0.378)	(6.683)	(0.1)	(0.067)	(0.157)
Δln *In*(*Wholesale PHP*)$_{t-2}$	-0.469	-0.187	-9.142	0.378***	0.16*	0.32
	(0.312)	(0.517)	(9.128)	(0.136)	(0.092)	(0.215)
Δln *In*(*Retail PHP*)$_{t-2}$	-0.061	0.018	7.223*	0.038	0.007	-0.173*
	(0.142)	(0.235)	(4.153)	(0.062)	(0.042)	(0.098)
Δln *In*(*Farmgate PHP*)$_{t-2}$	-0.229***	-0.015	-0.658	-0.013	-0.013	-0.013
	(0.073)	(0.12)	(2.127)	(0.032)	(0.021)	(0.05)
Δln *In*(*Landed Cost*)$_{t-3}$	0.094**	-0.183***	3.719***	0.041**	0.026**	0.067**
	(0.042)	(0.07)	(1.241)	(0.019)	(0.012)	(0.029)
Δln *In*(*Rice Stocks*)$_{t-3}$	-0.004	-0.001	0.119	0.003***	0.000	0.005**
	(0.003)	(0.004)	(0.075)	(0.001)	(0.001)	(0.002)
Δln *In*(*Imports*)$_{t-3}$	0.005	-0.423	9.145	-0.26***	-0.041	0.076
	(0.228)	(0.378)	(6.684)	(0.1)	(0.067)	(0.157)
Δln *In*(*Wholesale PHP*)$_{t-3}$	0.061	0.806	-22.388**	-0.269**	-0.231**	-0.629***
	(0.312)	(0.517)	(9.137)	(0.136)	(0.092)	(0.215)
Δln *In*(*Retail PHP*)$_{t-3}$	0.268*	0.037	7.397*	0.213***	0.062	-0.06
	(0.136)	(0.226)	(3.992)	(0.06)	(0.04)	(0.094)
Δln *In*(*Farmgate PHP*)$_{t-3}$	0.07	-0.105	-4.974**	0.018	0.024	-0.025
	(0.075)	(0.124)	(2.182)	(0.033)	(0.022)	(0.051)
Δln *In*(*Landed Cost*)$_{t-4}$	0.019	-0.139**	-0.193	0.009	-0.011	0.051*
	(0.042)	(0.07)	(1.236)	(0.018)	(0.012)	(0.029)
Δln *In*(*Rice Stocks*)$_{t-4}$	0.000	0.000	0.111	0.001	0.000	0.002
	(0.002)	(0.004)	(0.068)	(0.001)	(0.001)	(0.002)

ANNEX 2. VECM regressions summary table (continued)

Term	Δln*In* (*Landed Cost*)	Δln*In*(*Stocks*)	Δln*In*(*Imports*)	Δln*In* (*Wholesale PHP*)	Δln*In* (*Retail PHP*)	Δln*In* (*Farmgate PHP*)
*Δ*ln *In*(*Imports*)$_{t-4}$	-0.135 (0.195)	-0.673** (0.323)	2.907 (5.704)	-0.136 (0.085)	-0.037 (0.057)	0.107 (0.134)
*Δ*ln *In*(*Wholesale PHP*)$_{t-4}$	-0.045 (0.259)	1.398*** (0.43)	5.49 (7.588)	0.064 (0.113)	-0.064 (0.076)	-0.221 (0.179)
*Δ*ln *In*(*Retail PHP*)$_{t-4}$	0.247* (0.13)	-0.475** (0.216)	8.505** (3.809)	0.262*** (0.057)	0.172*** (0.038)	0.246*** (0.09)
*Δ*ln *In*(*Farmgate PHP*)$_{t-4}$	-0.003 (0.004)	-0.009 (0.006)	0.774*** (0.107)	0.005*** (0.002)	0.000 (0.001)	0.007*** (0.003)

***significant at one percent; **significant at five percent; *significant at ten percent

Diagnostic Tests		P - value
Breusch-Godfrey LM Test for Autocorrelation (H_0 : *No Autocorrelation*)	Lag 1	0.76
	Lag 2	0.42
	Lag 3	0.08
ARCH-LM Test for Heteroskedasticity (H_0 : *No Heteroskedasticity*)		0.00

ANNEX 3. Test for cointegration

H_0	Trace Statistic	Critical Values		
		10%	5%	1%
$r \leq 5$	1.81	6.50	8.18	11.65
$r \leq 4$	7.51	15.66	17.95	23.52
$r \leq 3$	19.93	28.71	31.52	37.22
$r \leq 2$	51.69	45.23	48.28	55.43
$r \leq 1$	95.81	66.49	70.60	78.87
$r = 0$	173.43	85.19	90.39	104.20

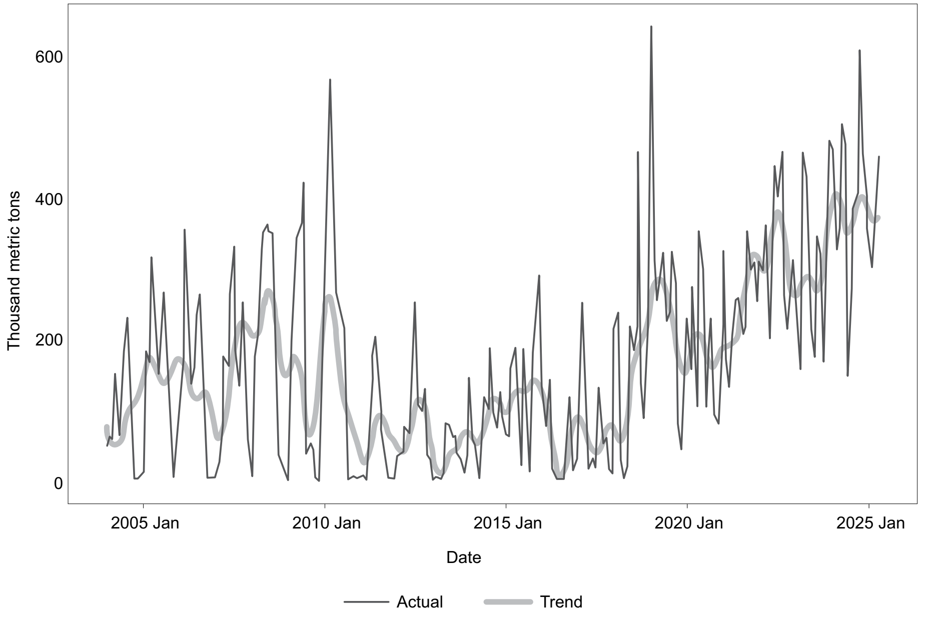
ANNEX 4. Test for cointegration

H_0	Eigenvalue Statistic	Critical Values		
		10%	5%	1%
$r \leq 5$	1.81	6.50	8.18	11.65
$r \leq 4$	5.70	12.91	14.90	19.19
$r \leq 3$	12.42	18.90	21.07	25.75
$r \leq 2$	31.76	24.78	27.14	32.14
$r \leq 1$	43.49	30.84	33.32	38.78
$r = 0$	78.25	36.25	39.43	44.59

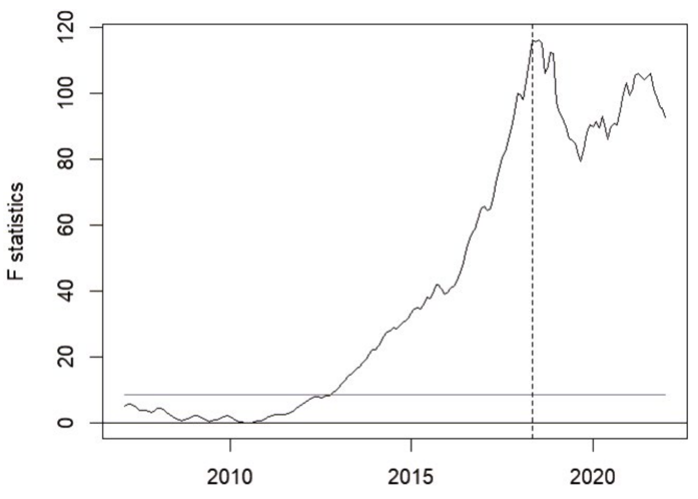
ANNEX 5. Optimal lag selection

Lags	FPE(n)	AIC(n)
1	5.84e-15	3.28e-15
2	4.26e-15	3.31e-15
3	4.07e-15	3.31e-15
4	4.11e-15	3.31e-15
5	3.95e-15	3.19e-15
6	4.44e-15	3.30e-15
7	5.11e-15	3.29e-15
8	5.03e-15	3.30e-15
9	4.96e-15	3.30e-15
10	5.14-15	3.30e-15
11	6.11e-15	3.29e-15
12	6.84e-15	3.28e-15

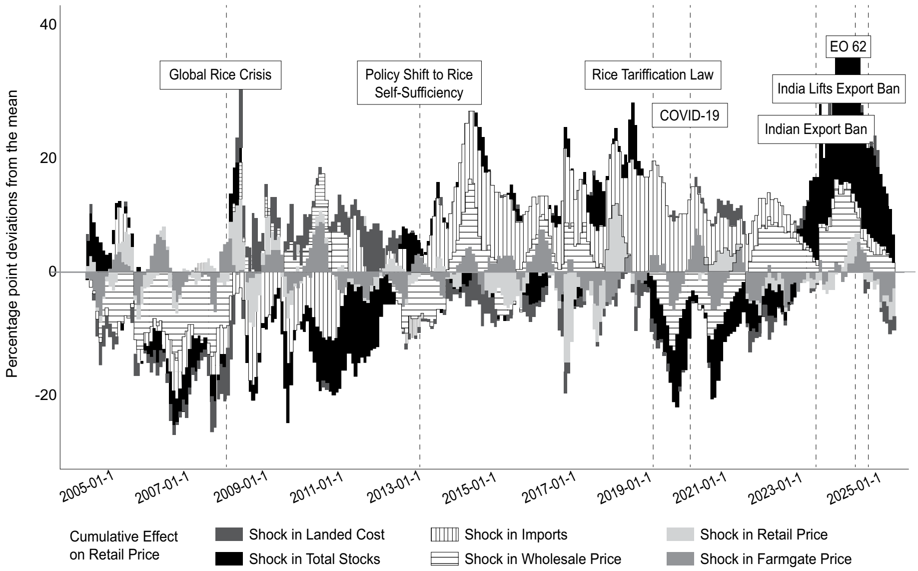
ANNEX 6. Historical volume of imports (January 2004–March 2025)



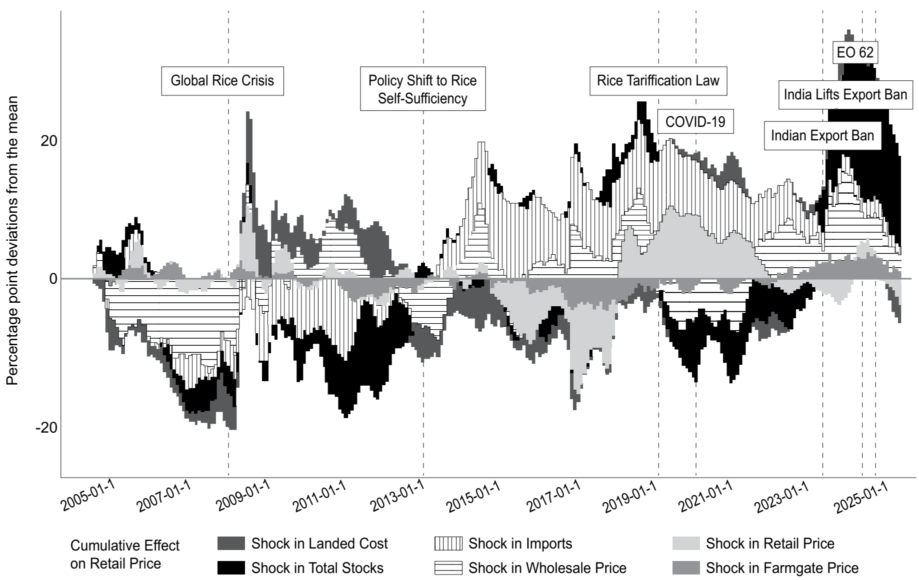
ANNEX 7. F-statistics across the series



ANNEX 8. Historical decomposition of farmgate prices (breakpoint set at May 2018)



ANNEX 9. Historical decomposition of retail prices (breakpoint set at May 2018)



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Local labor market concentration and union activity in the Philippines: descriptive estimates and implications

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Workers' voice institutions traditionally counterbalance the persistent wage- and term-setting power of firms in labor markets, but can only do so if they *exist*. Do we observe less union activity in labor markets where employment is more concentrated? We address this question and estimate unionization and bargaining activity across broadly aggregated industry-region labor markets using two register data sources from the Philippines: an establishment-level census and a union and collective bargaining registration database. Our results suggest that local labor market concentration is robustly and negatively associated with new union registrations and new collective agreements. A one-standard-deviation increase in the employment Herfindahl-Hirschman Index (HHI) and the four-firm concentration ratio (CR4) is associated with a 12 percentage-point (pp) and 10.4 pp lower probability of having a new union registration, and a 9.7 pp and 15.3 pp lower probability of having a new collective agreement, on average, respectively. Further, concentration is also associated with lower union membership densities. These results highlight how employer power in input labor markets is plausibly prohibitive for collective action and may deter organizing and bargaining in contexts where only a handful of firms dominate employment. For antitrust authorities in developing country contexts with low union salience and decentralized bargaining systems, a closer examination of the repercussions of concentrated labor markets in merger reviews, competition enforcement, and policy research is a promising way forward.

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1. Introduction

In recent years, labor market competition has become an increasingly salient priority for antitrust authorities and regulators globally. This reflects a growing recognition that anticompetitive practices in markets harm not only consumers in product markets but also workers in (input) labor markets. Competition authorities in the United States (US), United Kingdom, and Australia have launched investigations into employer collusion, wage-fixing agreements, and the misuse of non-compete clauses, which restrict worker mobility and suppress wages. Notably, the US Department of Justice secured its first criminal conviction under wage-fixing laws in *United States v. Eduardo Lopez* in April 2025, marking a milestone in the enforcement of competition laws on employer collusion [Rao et al. 2025]. In February 2024, the US Federal Trade Commission's (FTC) legal challenge of the proposed merger between Kroger and Albertsons incorporated the negative effects on workers' wages and benefits as part of its theories of harm, arguing that unions would have lower leverage to bargain with the merged entity [FTC 2024]. Meanwhile, the European Commission and various national regulators in Europe have begun embedding scrutiny of monopsony power into merger reviews. This signals a shift toward evaluating how proposed transactions might entrench employer power in labor markets [Aguado 2025]. These developments reflect antitrust authorities' growing recognition that the relevance of competition law extends beyond product markets and, importantly, encompasses input labor markets.

Beyond regulation, labor movements have long been a tool to counteract the downward pressure on wages and working conditions (e.g., through bargaining), but they can arguably only do so if they *exist*. On the one hand, standard rent-seeking models suggest unions, acting on their "monopoly face" [Freeman and Medoff 1984], target concentrated product markets where incumbent firms earn excess rents and deter investments [Grout 1984]. On the other hand, when input labor markets are concentrated, such that few employers compete for workers, organizing may become more challenging. Dominant employers can more easily surveil and retaliate against organizing attempts, while workers face limited outside options, undermining their bargaining leverage [Naidu et al. 2018].

The interplay between market concentration and union activity remains an active area of empirical research, especially in highly industrialized contexts. This article contributes to this literature by documenting robust negative associations between employment concentration and new union activity across local labor markets in the Philippines. As a middle-income economy with low union salience, highly decentralized bargaining, and a nascent competition authority, the Philippines possesses common institutional features found across developing countries. Crucially, the Philippine Competition Commission has yet to incorporate labor market analysis into its merger reviews or publicly announce enforcement action against anticompetitive practices of firms that deter competition in labor markets, such as non-compete clauses and no-poaching agreements.

Our descriptive findings show that employment concentration is robustly and negatively associated with both the probability of new union registrations and new collective bargaining agreements, even after controlling for industry, region, and market size indicators. We emphasize that these associations do not establish causality. Several confounding factors may drive both low union activity and high concentration, including business-friendly regulatory environments, weak labor law enforcement, or industry-specific characteristics that simultaneously discourage organizing and promote consolidation. Reverse causation is also plausible, such that lower unionization may enable firms to retain more profits for reinvestment and expansion, potentially increasing market concentration over time. Our contribution is therefore primarily descriptive. Notably, even in the absence of definitive identification, the strong negative association between concentration and union activity highlights a potential reinforcing dynamic worthy of regulatory attention. Local labor markets where employment is concentrated appear to face challenges in developing countervailing worker voice institutions. This pattern suggests that competition authorities in contexts with weak labor protections, and where unions might otherwise serve as an important check on employer power, should, at minimum, incorporate labor market dynamics in both merger and enforcement analyses. Such data collection would enable regulators to identify markets where concentration may be most problematic and lay the groundwork for future research that can establish causal mechanisms and inform more targeted interventions.

2. Countervailing forces in labor markets: a review of theory and evidence

2.1. Labor market monopsony

In contrast to assumptions in competitive markets, where agents are wage-takers and firms compete for workers, earlier models of imperfect competition recognize that firms exert power to set wages below the competitive level [Robinson 1933]. Recent work has broadly defined and operationalized "monopsony" to describe labor market structures in which firms, either individually or collectively, possess some term-setting power (Bhaskar et al. [2002]; Berger et al. [2022]). This power is often measured empirically using employment concentration, defined as the number of employers in a given local labor market. Evidence from US labor markets suggests that employer concentration can suppress wages for both incumbents and new hires, with effects ranging from 1.8 percent to 2.5 percent decreases (Bassanini et al. [2023]; Schubert et al. [2025]). As a market externality, studies find a wide range of negative effects on earnings, productivity, and employment security, especially in smaller labor markets (Marinescu et al. [2020]; Qiu and Sojourner [2023]).

Building on this framework, a growing empirical literature examines how the entry of large, dominant firms reshapes local labor markets. In theory, such an entry can generate an initial positive employment shock, followed by negative spillovers. Empirical studies of Walmart Supercenter entries across US localities document declines in wages [Wilmers 2018], increases in poverty [Lehner et al. 2024], and reductions in union activity [Choper et al. 2026]. These effects are understood to operate through multiple, connected mechanisms: large firms exert pressure on local suppliers to shift production into their established networks, a cost-cutting strategy that restructures employment along the supply chain [Lehner et al. 2024]. They crowd out smaller competing employers (Wiltshire et al. [2024]; Lehner et al. [2024]; Wiltshire [2025]) and, in doing so, weaken workers' capacity to organize and join labor unions [Choper et al. 2026]. Unsurprisingly, countries where labor market concentration is higher on average have been observed to have higher levels of wage inequality [Pignatti and Ananian 2026].

2.2. Labor power

Seminal work on labor market institutions conceptualizes unions as serving two primary functions. First, unions countervail firm power by organizing workers into a collective body capable of exerting pressure through the threat of strikes, otherwise known as the "monopoly face" of unions [Freeman and Medoff 1984]. This capacity can directly affect firm production and strengthen workers' ability to bargain over wages, employment security, and working conditions, thereby reducing monopsonistic outcomes (Grout [1984]; Kaufman [2012]). At the macro level, evidence suggests that union presence mitigates inequality, in part, by attenuating the disproportionate effects of labor market power on workers at the lower end of the wage distribution (Brady [2022]; Dube et al. [2025]).

However, the ability of unions to perform this countervailing role has weakened in recent decades. Labor market deregulation and the expansion of flexible employment arrangements, particularly in the growing service sector, have made organizing and collective bargaining more difficult across both tradable and non-tradable sectors (Katz [1993]; Ebbinghaus [2004]; Schnabel [2013]). At the same time, the decentralization of bargaining systems has increasingly confined union influence on firms, limiting their broader market-shaping capacity. These trends are compounded by globalization, which has increased the mobility of capital and intensified competitive pressures in both product and labor markets, further constraining union organizing efforts (Hyman and Gumbrell-McCormick [2017]; Schulze-Cleven [2017]).

The interaction between labor power and firm power is formalized in models in which increased market concentration raises firm profits while weakening workers' bargaining power [Dodini et al. 2022]. Empirical evidence is consistent with this framework. For instance, Choper et al. [2026] show that in the United States, Walmart Supercenters are less likely to enter local labor markets with higher levels of unionization. This suggests that unions can deter the expansion of large, dominant firms by limiting their ability to extract rents. At the same time, this dynamic implies that firms with substantial market power have incentives to avoid or actively mitigate unionization [Kaufman 2012]. Importantly, these findings are contingent on pre-existing levels of union strength, which may limit their applicability in contexts where union density is lower or more fragmented, such as in the Philippine case.

2.3. Union activity in the Philippines

Labor markets in the Philippines broadly reflect trends observed across developing economies, characterized by labor market deregulation, the expansion of flexible employment arrangements, and a structural shift from industrial to service-based employment (Kuruvilla et al. [2002]; Kuruvilla and Li [2021]). Within this context, unions continue to engage with core worker concerns, particularly wages and employment security, as documented in studies of union and worker association experiences (Aganon et al. [2009]; Certeza and Serrano [2014]; Serrano [2018]). However, their overall reach remains limited. Empirical evidence indicates that only a small share of workers is unionized and covered by collective bargaining agreements (CBAs) [Bitonio 2012]. More recent data further show that only one in five newly registered unions between 2016 and 2021 successfully negotiated CBAs, with bargaining outcomes observed to be relatively faster in manufacturing than in other sectors [Ramos and Suguitan 2025].

These patterns are consistent with broader global declines in private sector unionization across both developed and developing countries (Schnabel [2013]; Farber et al. [2021]; Asa [2024]). In the Philippine case, declining union density and limited CBA coverage reflect both structural and institutional constraints. The long-term shift away from manufacturing, traditionally the stronghold of union activity, towards more fragmented and dynamic service sectors has weakened the base for collective organization (Martin and Brady [2007]; Serrano [2018]; Schnabel [2020]). At the same time, unlike many European contexts where unions retain influence through centralized or sectoral bargaining arrangements, industrial relations in the Philippines are highly decentralized, with union formation and bargaining largely confined to the firm or plant level (Kuruvilla et al. [2002]; Viajar [2009]; Bitonio [2012]; Asa [2024]).

Institutional features of the labor market further constrain unionization. Legal frameworks restrict formal union membership primarily to regular employees, effectively excluding workers in informal or contractual arrangements and limiting the potential for broader-based organizing (Viajar [2009]; Asa [2024]). While union federations exist, bargaining outcomes remain largely determined at the firm level, contributing to uneven and often limited bargaining coverage. Moreover, the presence of registered unions does not necessarily translate into successful CBAs, reinforcing gaps between formal organization and effective labor representation (Bitonio [2012]; Ramos and Suguitan [2025]).

At the firm level, these constraints are compounded by employer incentives and worker perceptions. Firms have clear incentives to deter unionization to preserve profits, particularly in contexts characterized by imperfect competition (Kuruvilla et al. [2002]; Dodini et al. [2022]. Correspondingly, fear of management hostility is frequently cited by workers as a barrier to union participation in the Philippines (Aganon et al. [2009]; Certeza and Serrano [2014]). Limited bargaining success and low coverage may also discourage workers from organizing, creating a feedback loop that further weakens union presence. Taken together, union activity in the Philippines is shaped by the interplay among structural economic shifts, institutional design, and firm-level dynamics, all of which constrain the capacity to effectively counter market power.

2.4. Recent empirical evidence on concentration and union power

Recent empirical work has moved beyond treating firm power and worker power as separate forces, instead examining how they jointly shape labor market outcomes. In Lehner et al. [2024] and Choper et al. [2026], labor markets are conceptualized in terms of the dynamics between workers' voice institutions and employer power. Hence, high firm power may coexist with either high or low worker power, both with distinct implications for union activity. For instance, in highly concentrated labor markets, workers may intensify organizing efforts in response to limited outside options, potentially sustaining some bargaining capacity despite monopsonistic conditions. In such contexts, unions may attempt to capture economic rents generated by imperfect competition, consistent with the "monopoly face" of unions in standard theories (Grout [1984]; Kaufman [2012]), and shape contract outcomes accordingly [Marinescu et al. 2020].

However, emerging evidence suggests that the interaction between concentration and union power may ultimately reinforce, rather than offset, firm dominance. Choper et al. [2026] find that unionization declines by approximately five percentage points following the entry of large monopsonistic firms into previously unionized labor markets in the United States. While unions may initially deter firm entry to some extent, successful entry appears to weaken union presence over time, limiting their countervailing capacity. These findings align with a broader literature showing that monopsonistic firms influence not only wages and employment, but also inequality and unionization dynamics (Manning [2021]; Lehner et al. [2024]; Dube et al. [2025]).

These dynamics have increasingly drawn attention within competition policy. While traditionally focused on product markets, antitrust enforcement is now more explicitly considering labor market effects, particularly the ability of firms to set wages below marginal productivity (CEA [2016]; Autor et al. [2019]). Scholars have argued for incorporating labor market harms into antitrust analysis, especially in cases of mergers or conduct that increase employer concentration (Hemphill and Rose [2018]; Rose [2019]). In parallel, evidence from developing and East Asian contexts highlights how market concentration, often shaped by regulatory barriers to entry, can hinder structural transformation and limit employment generation, with downstream effects on wages and productivity [Balisacan 2021].

Taken together, this literature suggests that employment concentration not only reduces workers' outside options but also shapes the conditions under which collective bargaining emerges and persists. In highly concentrated labor markets, workers may face a dual constraint of limited mobility across employers and weakened institutional capacity to organize. At the same time, the direction of this relationship is theoretically ambiguous since concentration may suppress unionization through employer dominance or induce organizing as a response to constrained alternatives. This paper builds on this incipient literature by examining how employment concentration is associated with union activity and bargaining outcomes in the Philippine context, where union density and collective bargaining coverage remain limited. By situating the analysis in a setting characterized by decentralized bargaining and low union salience, the paper assesses whether countervailing labor power is present under conditions of structural constraint.

3. Data and methods

We construct a novel analytical dataset by first aggregating two previously untapped administrative databases from the Philippines for studying employment concentration and union activity: an establishment-level census and a national union registration database. The first source is the 2018 Census of Philippine Business and Industry (CPBI), administered by the Philippine Statistics Authority (PSA), which is a comprehensive census of establishments conducted every six years. This dataset contains data on employment, payroll, and revenues for over 65,000 firms in the formal sector. We aggregate this data to generate our key independent variables, labor market concentration indices, Herfindahl-Hirschman Index (HHI) and the four-firm concentration ratio (CR4), at the regional and industry levels. The second source is the union registration database maintained by the Department of Labor and Employment (DOLE) – Bureau of Labor Relations (BLR). While the full historical database tracks labor organizations as far back as 1953, our analysis restricts the sample to new union registrations and collective bargaining agreements (CBAs) recorded between 2016 and 2021. This window temporally aligns the union formation outcomes with the market concentration conditions captured in the 2018 CPBI. This dataset captures union characteristics at the time of registration, most notably the number of union members and the total number of firm employees, which allows us to calculate initial union density. To combine these sources, we aggregate "local labor markets" as industry-region cells. Both datasets consistently apply two national classification frameworks: the one-digit Philippine Standard Industrial Classification (PSIC) and the regional-level Philippine Standard Geographic Code (PSGC). Using these identifiers, we merged the CPBI-based concentration indicators with the DOLE union registration outcomes to form our primary analytical sample.

As is common with administrative data sources, the DOLE union registry contains some gaps. First, some union registrations lack information on either the number of union members or the total firm employees, resulting in inadmissible values for union density estimates. Further, a subset of registrations lacks valid PSIC sector classifications, which prevents those observations from being matched to the CPBI market data. Furthermore, it is important to note that the CPBI is an establishment census that inherently captures only the formal sector. Since the PSA typically utilizes a sampling threshold for micro-enterprises and fully enumerates only establishments with 20 or more employees, our derived market concentration indices, HHI and CR4, strictly reflect product and labor market power within the formal economy. However, because labor unions organize almost exclusively within formal, registered enterprises, this restriction closely aligns our independent variables with the realistic boundaries of the unionized labor market.

3.1. Measuring employment concentration

To analyze the association between concentration and union activity, we utilize two indicators of concentration: the Herfindahl-Hirschman Index (HHI) and the four-firm concentration ratio (CR4). Standard economic analysis suggests that in imperfectly competitive markets, firms possess price- or wage-setting power that distorts total surplus. The HHI is a standard metric in competition analysis that captures the degree of concentration within a defined market. It is calculated by summing up the squares of the market shares of all firms in each industry-region cell:

$$HHI = \Sigma_{i=1}^{n} S_i^2 \tag{1}$$

where S_i is the market share of the i^{th} firm, and n is the number of firms in the defined market. Following the 2023 Department of Justice (DOJ)–Federal Trade Commission (FTC) Merger Review Guidelines, markets with HHI values exceeding 0.18 (or 1,800 depending on the scale) are generally deemed "highly concentrated". While antitrust policy has traditionally focused on product-market concentration (monopoly power), recent literature has highlighted the critical role of labor-market concentration (monopsony power) in suppressing wages and altering labor outcomes (Autor et al. [2019]; Balisacan [2021]; Azar et al. [2022]). The construction of HHI measures varies significantly across studies depending on the mechanism under investigation. Prior work has utilized employment shares (Azar et al. [2020]; Benmelech et al. [2022]), vacancy postings [Azar et al. 2020; 2022], or payroll [Handwerker and Dey 2024]. Each approach carries distinct measurement assumptions and potential limitations. Employment-based HHIs assume that current employment levels proxy for firms' labor demand and competitive position but may be contaminated by supply-side factors if workers sort across firms based on unobserved preferences or constraints. Vacancy-based measures more directly capture labor demand but require comprehensive job posting data rarely available in developing country contexts. Recent work has also raised methodological concerns about the sensitivity of HHI-based inferences to market-definition choices and the potentially nonlinear relationship between concentration indices and the actual exercise of market power [Berry et al. 2019]. Given these measurement challenges and the absence of a universally preferred concentration metric, we calculate HHI across three distinct bases (employment, payroll costs, and product market revenues) and additionally report results using the four-firm concentration ratio (CR4).

CR4 provides the aggregated share of the four largest firms in a defined local market, expressed as a percentage. This ratio is useful to indicate the form or structure of labor market competition. Higher CR4s imply an oligopsonistic or monopsonistic structure. However, this measure cannot capture the heterogeneity between and among the top four firms. For instance, if one firm dominates an industry with 80 percent of the employment share, with other firms having small and insignificant shares, this implies a monopsonistic structure. Whereas if four firms dominate another industry with 20 percent employment share each, this implies more of an oligopsonistic structure. Both scenarios yield a CR4 of 80 percent, although their market structures are different. Nonetheless, the CR4 is a useful complementary measure of concentration that reveals the relative size of the biggest firms in each local labor market.

To capture the multidimensional nature of concentration among firms, we construct and analyze four distinct measures, each of which captures a mechanism by which a firm or group of firms might be associated with the probability of new union registration. First, **employment concentration** is calculated as the total number of employees at each firm, thereby measuring the concentration of the *actual stock* of workers within and across firms in the same market. Second, while employment figures capture the *stock* of workers, **payroll concentration** captures a firm's share of the local *wage costs*. A firm might employ a moderate share of the local workforce but account for a large share of the payroll if it employs highly skilled, highly paid workers or sets the wage standard for the region. Utilizing payroll HHI, as is the practice in prior work [Berger et al. 2022], allows us to test whether concentration in compensation structures is associated with union formation differently than employment HHI.

Finally, to distinguish labor market concentration from traditional product market concentration, we also obtain HHIs based on **firm revenues**. In highly concentrated *product markets*, few producers dominate the selling of goods or services. Including revenue concentration is vital to our empirical strategy because it allows us to identify whether firms' power in product markets, labor markets, or both is associated with unionization. As a supplementary empirical analysis, we obtain concentration measures of **subcontracted employment**. Firms may attempt to evade unionization and dilute worker bargaining power by utilizing non-regular, precarious work arrangements, such as agency-hired or subcontracted labor. Measuring concentration in this domain allows us to account for alternative labor sourcing strategies and observe how the dominance of subcontracting practices in a market affects the registration of formal labor unions.

3.2. Relevant market definition

Market definition is foundational to any empirical assessment of labor market concentration and its relationship with collective bargaining outcomes. Following standard antitrust principles, the relevant market comprises two dimensions: geographic scope and product market definition. In labor markets, the latter corresponds to the set of substitutable employment opportunities defined by occupational classifications, skill categories, or industries and sectors.

3.2.1 Geographic market definition

The relevant geographic market delineates the spatial boundaries within which workers and employers engage in meaningful competition, specifically the area within which workers search for alternative employment and firms compete to recruit labor. This follows the logic of the hypothetical monopsonist test, such that a properly defined geographic market is the smallest region in which a hypothetical monopsonist could profitably impose a small but significant and non-transitory decrease in wages (SSNDW) [Naidu, et al. 2018]. This test is the labor market analog to the small but significant and non-transitory increase in price (SSNIP) test, which is the widely utilized equivalent in product markets [Motta 2004]. The appropriate geographic scope varies systematically with worker mobility, occupation-specific search costs, and the degree to which skills are portable across locations [Broulik 2026]. For highly specialized technical positions, the relevant market may be national or international; for occupations requiring physical presence or involving location-specific human capital, markets may be as narrow as metropolitan areas or commuting zones. The use of commuting zones as the geographic unit of analysis has become standard in the labor market concentration literature precisely because they approximate economically meaningful labor market boundaries defined by revealed commuting patterns rather than arbitrary administrative jurisdictions [Azar et al. 2020; 2022]. Commuting zones capture a realistic scope within which workers are willing to search for and accept employment, thereby providing a defensible approximation of the geographic market within which employers compete for workers.

3.2.2. Product market definition (occupational or industry markets)

The product market dimension identifies the set of jobs or occupations that are reasonably substitutable from the perspectives of both workers (supply-side substitution) and employers (demand-side substitution). Operationally, this requires delineating groups of workers whose skills, qualifications, and job characteristics render them close substitutes in production. In antitrust contexts, such as hospital merger analysis, product markets are typically defined at the level of specific professional occupations [Prager and Schmitt 2021]. For instance, registered nurses constitute one market, licensed physicians another, each with distinct skill requirements and limited cross-substitutability.

The empirical literature on labor market concentration has predominantly adopted occupation-based market definitions. Azar et al. [2020], Bassanini et al. [2023], Qiu and Sojourner [2023] calculate concentration metrics within detailed occupational categories, given the (testable) presumption that workers within the same occupation face similar employment alternatives and compete within a common labor pool. This approach aligns with the theoretical premise that monopsony power derives from employer concentration within narrowly defined skill markets. However, occupation-based definitions are not universally appropriate. When analyzing decentralized union activity and collective bargaining, which typically occur at the firm or industry level and cover workers across multiple occupational categories, industry-based definitions better capture the relevant scope of labor market competition and bargaining outcomes. This approach is consistent with recent work by Benmelech et al. [2022], Meiselbach et al. [2022], and Rinz [2022], who define labor markets by industry when firm-level employment dynamics are the object of study. Moreover, data constraints frequently necessitate industry-level analysis: many administrative datasets, including the CPBI used in this study, report only aggregate firm-level employment without occupational disaggregation.

3.2.3. Analytical sample and union activity

Taken together, we broadly define local labor markets at the PSIC (industry)-region level and calculate concentration measures using total employment, payroll costs, firm revenues, and subcontracted employment. While this represents a broader market definition than the commuting zone-occupation approach common in US-based studies, this choice is both empirically constrained and conceptually defensible. First, the Philippines lacks commuting zone data, and unionization records contain geographic identifiers only at the regional level. Second, and critically, this broader definition likely leads us to underestimate labor market concentration. The relationship between market definition and measured concentration is well-established: narrower geographic and product market definitions yield higher concentration levels because they more precisely isolate local competitive conditions. Azar et al. [2020] demonstrate this empirically for the United States: defining markets at the state level (the broadest possible geography), only seven percent of markets are highly concentrated (HHI > 2500); this rises to 60 percent under commuting zone definitions and 78 percent under county-level definitions. The progression is monotonic: finer market delineation reveals greater concentration.

In sum, our sample first comprised 306 observations spanning 17 regions and 18 sectors, constructed by aggregating CBA provision data to the PSIC-region level and merging with corresponding concentration measures. Six local labor markets were excluded because they had no recorded firm-level or union-level data in either data source. For both outcomes, namely union registration and collective bargaining, we code them as binary if there was at least one activity within the local labor market from 2016 to 2021. For a continuous outcome such as union density, these are averaged across all unions registered in each local labor market. Note, however, that many union registration entries have incomplete information regarding the number of unionized workers and the number of employees in the firm upon registration, leading to a substantial data loss for the union density variable. Notably, our sample should be understood to capture firm and union activity *conditional on formal-sector employment*. This conditional interpretation remains policy-relevant for two reasons. First, unionization and collective bargaining agreements exist exclusively within the formal sector. Workers who form unions and negotiate CBAs have already selected into formal employment, and the relevant question is whether employer concentration within that sector affects their collective bargaining outcomes. Second, if informal employment serves as an outside option that constrains formal employers' wage-setting power, this will bias our estimates *toward zero*: we would be less likely to detect relationships between concentration and bargaining outcomes, making our findings conservative. We recognize that these limitations constrain us to define local labor markets and union activity much more broadly than ideal from a theoretical standpoint and the common approaches in the literature.

3.3. Estimation

We estimate the relationship between labor market concentration and collective bargaining outcomes using logistic regression models, analyzing union registration and collective bargaining agreement provisions as separate binary outcomes. For each outcome, we employ two concentration measures, HHI and CR4, calculated across three dimensions: employment, payroll costs, and product market revenues. The annexes contain the estimates for subcontracted employment. All concentration measures are standardized (mean of zero, standard deviation of one) to facilitate coefficient interpretation and comparison across specifications. We present three nested model specifications for each concentration measure. The baseline specification includes only the continuous concentration metric and a binary indicator for absolute monopsony markets (fewer than four firms operating in the market in the CPBI data). The second specification incorporates region and industry fixed effects to absorb geographic and sectoral heterogeneity that may correlate with both concentration and collective bargaining outcomes. The third specification adds labor market-specific control variables to account for additional observable characteristics that may confound the concentration-bargaining relationship, namely total employment to control for market size, average firm size to account for market scope and density, and average firm costs to account for regional and sectoral wage premia, all log-transformed.

Coefficients are reported as odds ratios, with values below one, indicating that higher concentration is associated with lower odds of the outcome. To facilitate substantive interpretation of effect sizes, we also present predicted probability plots that trace the estimated probability of new union registration and collective bargaining activity across the distribution of employment concentration, ranging from one standard deviation below the mean (low concentration) to three standard deviations above (extreme concentration), holding all other variables at their means.

4. Results and discussion

4.1. Concentration and union activity across local labor markets

Philippine local labor markets exhibit markedly high concentration levels even under a considerably broad local labor market definition. As shown in Table 1, the share of highly concentrated markets varies considerably across measurement approaches: 26 percent when using employment-based HHI, 42 percent using payroll HHI, 41 percent using product market (revenue) HHI, and 65 percent using subcontracted employment HHI. These figures substantially exceed the US baseline, suggesting that employer concentration is a more pervasive feature of Philippine labor markets. Azar et al. [2020] estimate, using vacancy HHIs at the state × occupation level, that only seven percent of US local labor markets are highly concentrated in the broadest possible definition, with this share rising substantially as markets are defined more narrowly (60 percent under commuting zone definitions, 78 percent under county-level definitions). Applying the logic from Azar et al. [2020] to our context reinforces the intuition that our broad market definition plausibly understates the true degree of employer concentration that workers experience. The figures in Table 1 almost certainly represent lower bounds. If occupation-specific data and finer geographic units were available, the prevalence of highly concentrated markets would plausibly be substantially higher. This conservative measurement framework means that any observed association between concentration and collective bargaining outcomes emerges despite measurement error that biases against finding effects.

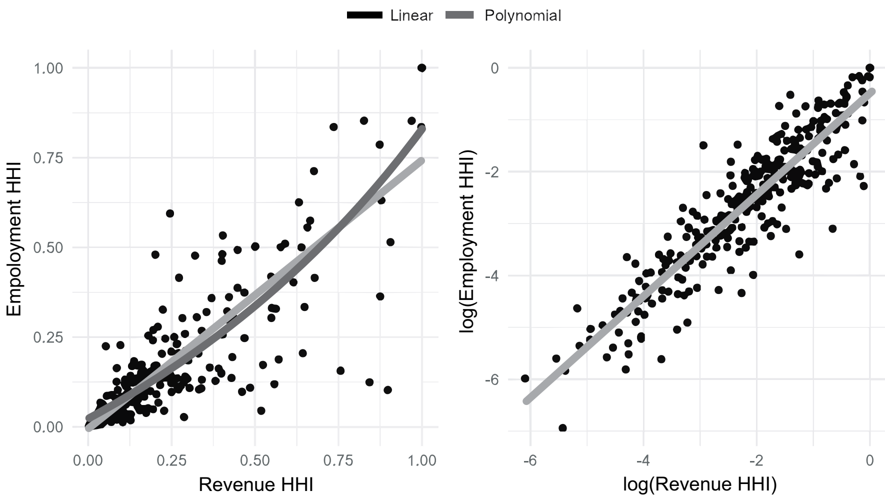
TABLE 1. Summary statistics of key variables of interest across local labor markets

	n	Mean	SD	Min-Max	Median	Share Highly Concentrated
Herfindahl-Hirschman Index (HHI)						HHI>=0.18
Employment	300	0.163	0.210	0.00-1.00	0.089	0.260
Payroll (Labor Cost)	276	0.247	0.284	0.00-1.00	0.147	0.424
Product Market (Revenue)	299	0.224	0.241	0.00-1.00	0.133	0.405
Subcontracted Employment	260	0.390	0.312	0.00-1.00	0.308	0.654
Four-Firm Concentration Measures (CR4)						CR4>=0.8
Employment	300	0.507	0.290	0.02-1.00	0.480	0.193
Payroll (Labor Cost)	281	0.474	0.321	0.00-1.00	0.440	0.217
Product Market (Revenue)	300	0.464	0.318	0.01-1.00	0.429	0.207
Subcontracted Employment	260	0.306	0.347	0.00-1.00	0.158	0.138
Union Activity Outcomes						
New Union Registration	300	0.267	0.443	0.00-1.00	0.000	-
New Collective Bargaining Agreement	300	0.367	0.483	0.00-1.00	0.000	-
Union Density (Average from 2016-2021)	74	0.516	0.226	0.04-1.00	0.488	-

Meanwhile, the CR4 measures present a complementary perspective on market structure. Between 14 percent and 22 percent of markets exhibit high CR4 concentration (CR4≥0.8), depending on the measurement base, with employment-based CR4 showing 19 percent of markets as highly concentrated. Notably, subcontracted employment exhibits contrasting patterns across metrics: while 65 percent of markets are highly concentrated under the HHI measure, only 14 percent exceed the CR4 threshold. This divergence reflects the different properties of these indices. HHI is more sensitive to the full firm-size distribution and assigns greater weight to dominant firms, whereas CR4 focuses exclusively on the top four firms and is less affected by the competitive fringe or outliers. The substantial gap between HHI and CR4 for subcontracted employment (means of 0.390 vs. 0.306) suggests that while a few firms dominate subcontracted labor arrangements in many markets, the concentration of market share among the very largest firms is less extreme than the overall distributional inequality captured by HHI. These measurement differences underscore the value of examining multiple concentration metrics, as each captures distinct dimensions of market structure relevant to assessing employer market power.

Tangentially, we note that product-market concentration and labor-market concentration are strongly positively correlated within local markets. Figure 1 presents scatterplots of revenue-based HHI against employment-based HHI, shown both in levels (left panel) and in logs (right panel). The relationship is approximately linear in both specifications, with a correlation coefficient of 0.86, indicating that markets with high seller concentration also tend to have high employer concentration. This pattern suggests that market power in the Philippines is frequently bilateral, such that firms that possess price-setting power in product markets simultaneously exercise wage-setting power in labor markets.

FIGURE 1. Local product and labor market concentration



This empirical relationship has implications for understanding union activity. Standard economic theory predicts that deviations from perfect competition generate economic rents, either monopoly rents from product market power or monopsony rents from labor market power. When both forms of market power coexist, firms capture rents on both margins by plausibly charging prices above marginal cost to consumers while paying wages below marginal revenue product to workers. The presence of these quasi-rents creates scope for rent-sharing through collective bargaining. Workers in concentrated labor markets face fewer outside options and therefore have strong incentives to organize collectively to capture a share of firm rents that would otherwise accrue entirely to employers. Moreover, the absorptive capacity for wage increases is greater in firms with substantial product market power, as excess profit margins provide a buffer against labor cost increases without threatening firm viability. This framework implies that the joint presence of product– and labor–market concentration may amplify both the incentives for unionization and the potential gains from collective bargaining.

This observed correlation may also simply reflect the geographic distribution of firm size rather than causal market power. Relatedly, concentration may also reflect economies of scale, sector-specific entry conditions, or productivity differences that allow larger firms to emerge in particular industry-region markets, rather than the exercise of labor market power alone. In less urbanized regions with thinner markets, a single large firm may dominate both product sales and local employment simply due to scale, mechanically generating high concentration on both dimensions without necessarily exercising strategic market power. Disentangling these mechanisms remains an empirical challenge, though both interpretations are consistent with the broader finding that Philippine labor markets exhibit substantial employer concentration.

4.2. New union registrations

Table 2 shows odds ratios from logistic regression models of new union registration. The central finding is consistent and robust—higher employer concentration is associated with substantially lower odds of new union formation across nearly all specifications and concentration measures. Employment-based concentration measures yield the most robust negative associations. A one-standard-deviation increase in employment HHI reduces the odds of new union registration by 62 to 84 percent, depending on the specification (odds ratios of 0.382 in the intermediate model and 0.276 in the fully saturated model), with all coefficients statistically significant at conventional levels. Employment CR4 exhibits similar patterns, with odds ratios ranging from 0.330 to 0.391 in models with fixed effects and controls. Product market concentration tells a similar story. Product market concentration, measured by revenue HHI and CR4, is negatively associated with unionization, with odds ratios ranging from 0.323 to 0.577 for HHI and 0.503 to 0.933 for CR4, though statistical significance attenuates somewhat in the most saturated specifications as standard errors increase with the inclusion of market-level controls. This departs from earlier US patterns in the 1960s and 1970s, wherein markets with "higher quasi-rents" had higher union activity [Abowd and Farber 1990]. Meanwhile, the payroll-based concentration measures have a more nuanced pattern. Payroll HHI and CR4 show negative associations with union registration in the reduced-form specifications, but these associations become statistically insignificant once region and industry dummies and other controls are included.

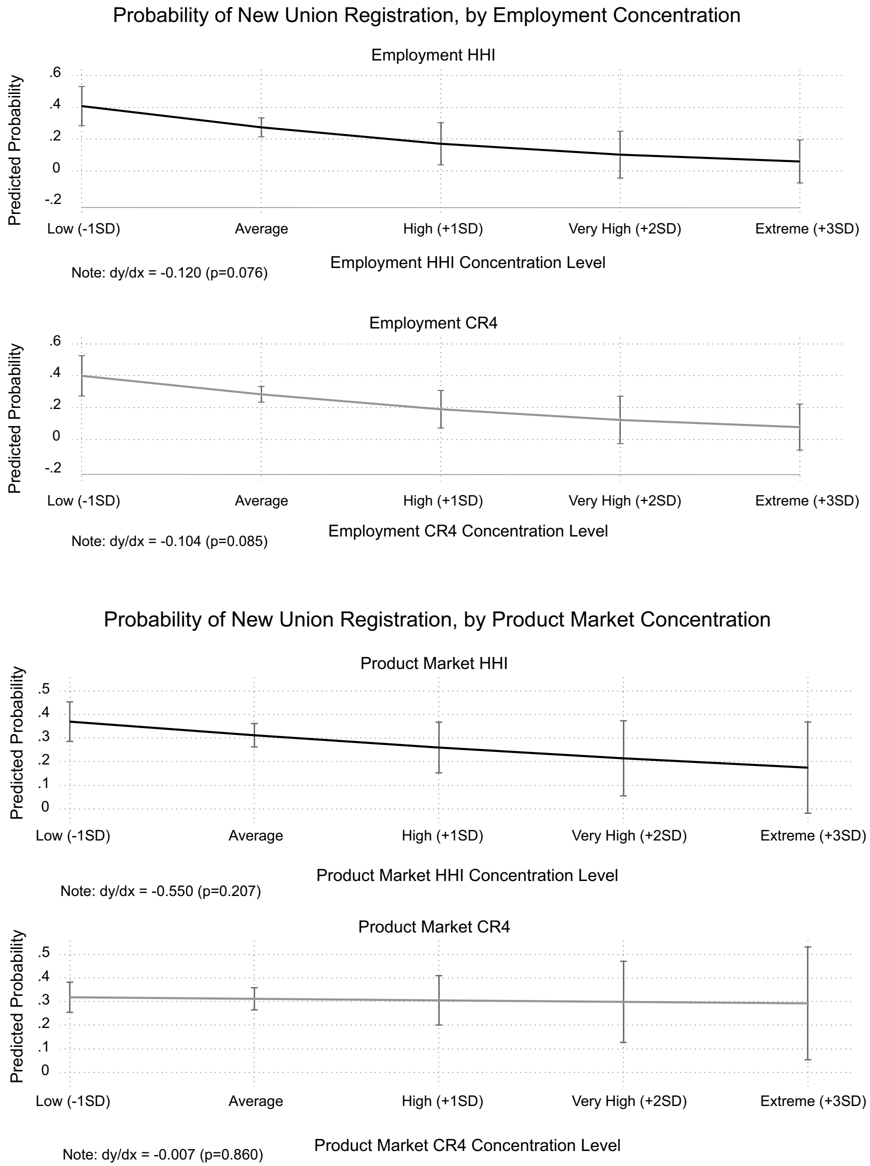
Following the fully specified logistic regression models, we obtain predicted probabilities of new union registration across varying levels of employment concentration for ease of interpretation on the probability rather than the odds scale. Figure 2 shows that for local labor markets without an absolute monopoly and with an average level of employment concentration, the predicted probability of having a new union registration is around 28 percent. From this average, a one-standard-deviation increase in employment HHI and CR4 is associated with a 12 pp and 10 pp lower probability of having a new union in the market, respectively. Meanwhile, product market concentration, measured using HHI and CR4, is not significantly associated with union registration. The top panels of Annex 4 and 5 show the association between union registration and payroll and subcontracted employment concentration, respectively.

TABLE 2. Regression results for new union registration (odds ratios)

	Herfindahl-Hirschman Index (HHI)			4-Firm Concentration Ratio (CR4)		
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Employment						
z_Employment HHI	0.155*** (0.078)	0.382* (0.195)	0.276* (0.199)			
z_Employment CR4				0.369*** (0.070)	0.391** (0.175)	0.330* (0.208)
Observations	300	254	250	300	254	250
Payroll (Labor Cost)						
z_Payroll HHI	0.519** (0.154)	0.627 (0.295)	0.609 (0.258)			
z_Payroll CR4				0.533*** (0.093)	0.800 (0.309)	0.629 (0.259)
Observations	276	215	215	281	246	246
Product Market (Revenues)						
z_Revenue HHI	0.323*** (0.121)	0.499* (0.196)	0.577 (0.250)			
z_Revenues CR4				0.503*** (0.087)	0.869 (0.291)	0.933 (0.365)
Observations	299	240	236	300	254	250
CONTROLS						
Absolute monopoly market	Yes	Yes	Yes	Yes	Yes	Yes
ln_total_employment	No	No	Yes	No	No	Yes
ln_avg_firm_size	No	No	Yes	No	No	Yes
ln_avg_labor_cost	No	No	Yes	No	No	Yes
Region FE	No	Yes	Yes	No	Yes	Yes
Industry FE	No	Yes	Yes	No	Yes	Yes

Note: z_ denotes standardized values and these estimates are exponentiated coefficients and should therefore be interpreted as odds ratios (relative to 1=having a new union). The full regression results, including parameter estimates for all controls, are shown in the Annexes. Each model is estimated separately without data imputation and with robust standard errors enclosed in parentheses.

FIGURE 2. Predicted probabilities of new union registrations by market concentration



Union Density. When looking specifically at the average union density of those new union registrations, we present its pairwise correlation statistics with each concentration measure. As noted in Table 1, missing union density data and the low incidence of local labor markets with new union registrations during our sample period yield only 74 observations with valid average union density measures.

This constrains us from modeling this variable formally in a regression framework with adequate statistical power. Nevertheless, the correlations provide suggestive evidence consistent with the union registration findings. A one-standard-deviation increase in employment HHI is associated with a 0.251 decrease in union density ($p = 0.031$), indicating that in more concentrated labor markets, not only are workers less likely to form unions, but when unions do emerge, they attract a smaller share of the eligible workforce. Payroll HHI exhibits a similar negative association ($r = -0.230$, $p = 0.060$), significant at the 10 percent level. The CR4 measures and product market concentration indicators show negative point estimates but fail to reach conventional significance thresholds, likely reflecting both the reduced sample size and the greater measurement noise in these variables. The consistency of negative associations across employment-based and payroll-based HHI measures reinforces the interpretation that labor market concentration inhibits collective worker organization both in the extensive and intensive margins.

TABLE 3. Pairwise correlation between union density and concentration measures

Variable	Correlation (r)	sig	p-value
z_Employment HHI	-0.251	**	0.031
z_Employment CR4	-0.190		0.105
z_Payroll HHI	-0.230	*	0.060
z_Payroll CR4	-0.054		0.650
z_Revenues HHI	-0.122		0.305
z_Revenues CR4	-0.178		0.130
z_Subcontracted Employment HHI	0.040		0.741
z_Subcontracted Employment CR4	-0.017		0.884

4.3. Bargaining outcomes

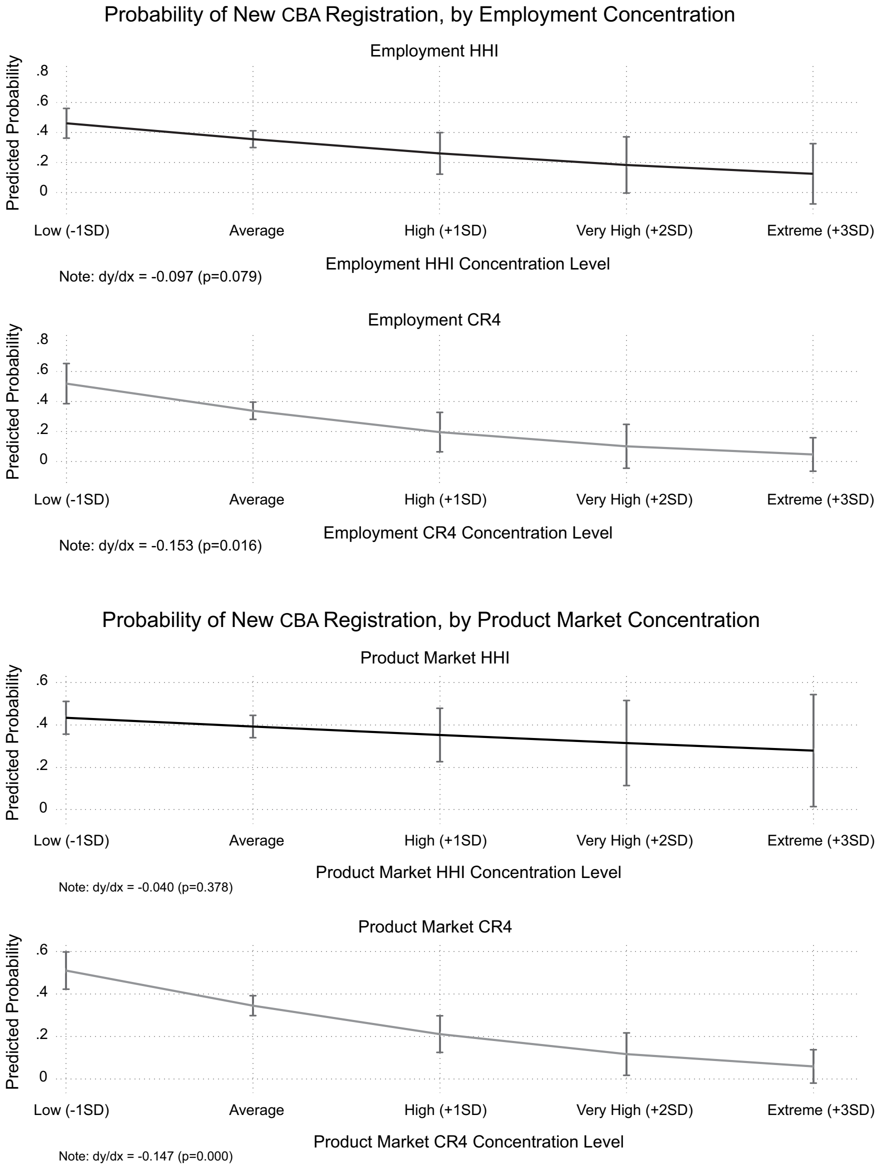
Table 4 presents logistic regression estimates of the relationship between labor market concentration and the formation of new collective bargaining agreements, with coefficients again reported as odds ratios. The results mirror and extend the union registration findings: higher employer concentration is associated with substantially lower odds of successful collective bargaining agreement formation across all concentration measures and specifications. Subcontracted employment concentration exhibits the most dramatic negative associations. A one-standard-deviation increase in subcontracted employment HHI reduces the odds of CBA formation by 61 to 85 percent (odds ratios ranging from 0.153 to 0.389), with all coefficients statistically significant across specifications. Subcontracted employment CR4 shows similarly robust negative effects (odds ratios ranging from 0.214 to 0.316). Payroll-based concentration measures, which showed inconsistent results for union registration, now demonstrate strong and stable negative associations with CBA formation: payroll HHI yields odds ratios ranging from 0.266 to 0.477, while payroll CR4 ranges from 0.238 to 0.432, all highly significant even in the fully saturated model with region, industry, and market-level controls. Product market concentration continues to predict lower CBA formation, though with some attenuation in the fully specified models.

TABLE 4. Regression results for new collective bargaining agreements (odds ratios)

	Herfindahl-Hirschman Index (HHI)			4-Firm Concentration Ratio (CR4)		
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Employment Total						
z_Employment HHI	0.153*** (0.070)	0.319** (0.182)	0.389* (0.212)			
z_Employment CR4				0.316*** (0.058)	0.214*** (0.091)	0.224** (0.144)
Observations	300	283	274	300	283	274
Payroll (Labor Cost)						
z_Payroll HHI	0.477*** (0.124)	0.310** (0.160)	0.256* (0.181)			
z_Payroll CR4				0.432*** (0.075)	0.346*** (0.129)	0.238*** (0.119)
Observations	276	236	236	281	254	254
Product Market (Revenues)						
z_Revenue HHI	0.348*** (0.107)	0.516* (0.194)	0.697 (0.288)			
z_Revenues CR4				0.397*** (0.068)	0.284*** (0.095)	0.224*** (0.101)
Observations	299	269	260	300	283	274
CONTROLS						
Absolute monopoly market	Yes	Yes	Yes	Yes	Yes	Yes
ln_total_employment	No	No	Yes	No	No	Yes
ln_avg_firm_size	No	No	Yes	No	No	Yes
ln_avg_labor_cost	No	No	Yes	No	No	Yes
Region FE	No	Yes	Yes	No	Yes	Yes
Industry FE	No	Yes	Yes	No	Yes	Yes

Note: z_ denotes standardized values and these estimates are exponentiated coefficients and should therefore be interpreted as odds ratios (relative to 1=having a new union). The full regression results, including parameter estimates for all controls, are shown in the Annexes. Each model is estimated separately without data imputation and with robust standard errors enclosed in parentheses.

FIGURE 3. Predicted probabilities of new CBA registrations by market concentration



Following the fully specified logistic regression models, we again obtain predicted probabilities of new collective bargaining agreements across varying levels of employment and revenue concentration for ease of interpretation on the probability rather than the odds scale. Figure 3 shows that for local labor markets without an absolute monopoly and with an average level of employment concentration, the predicted probability of having a new collective agreement is around 38 percent. From this average, a one-standard-deviation increase in employment HHI and CR4 is associated with a 9.7 pp and 15.3 pp lower probability of having a new collective agreement, respectively. Meanwhile, product market concentration, measured using CR4, is also negatively and significantly associated with union registration. The bottom panels of Annex 4 and 5 show the association between collective agreements and payroll and subcontracted employment concentration, respectively.

These findings carry important implications for understanding the interplay between concentration and collective bargaining. The established literature demonstrates that employer concentration suppresses wages and employment outcomes through direct monopsony channels (Azar et al. [2020]; Berger et al. [2022]). Our results indicate that monopsony power extends beyond its direct wage effects and may undermine workers' capacity to organize collectively and negotiate formal agreements. This represents a compounding mechanism in which concentrated labor markets not only enable employers to extract monopsony rents through wage suppression but also create structural barriers to workers' voice institutions that, economic theory suggests, could mitigate monopsony power by countervailing employer market power (Naidu et al. [2018]; Qiu and Sojourner [2023]). In competitive labor markets with excess profits or rents, unions can bargain for redistribution of those rents through higher wages and improved working conditions without threatening firm viability. The negative concentration-bargaining gradient we observe suggests that precisely where such countervailing power would generate the largest potential welfare gains for workers, it is least likely to emerge.

5. Implications and conclusions

5.1. Summary

Our empirical analyses reveal a robust negative association between employer concentration and union activity across broadly defined Philippine labor markets. A one standard deviation increase in employment-based HHI is associated with a 12 pp lower probability of new union registration and a 9.7 pp lower probability of new collective bargaining agreement, with the employment CR4 measures exhibiting comparable estimates (10.4 and 15.3 percentage points, respectively). These associations persist across multiple model specifications that progressively absorb regional and sectoral variation and other observable labor market characteristics. The concentration in the scope of employment is concerning. Between 19 percent and 65 percent of all local labor markets qualify as highly concentrated, depending on the measurement approach. These figures substantially exceed comparable US estimates and likely understate true concentration given our broad market definitions. Notably, product market and labor market concentration are strongly correlated (r = 0.86), indicating that firms dominating local product markets tend simultaneously to dominate local labor markets, creating bilateral market power that yields implications for both consumers and workers. Even among labor markets where unions successfully form, employment HHI correlates negatively with union density, suggesting that employer market power operates on both the extensive margin (union formation) and the intensive margin (union size).

These results extend the labor market monopsony literature beyond its traditional focus on wage and employment outcomes to encompass institutional outcomes that mediate workers' capacity to mitigate employer power. It is well-established that employer concentration is associated with wage suppression (Azar et al. [2020]; Benmelech et al. [2022]) and lower aggregate employment [Qiu and Sojourner 2023]. Consequently, related works by Naidu et al. [2018] and Qiu and Sojourner [2023] argue that unions can serve as countervailing forces that compress wage distributions and capture firm rents in imperfectly competitive labor markets. Our results, consistent with causal findings by Choper et al. [2026], show a negative concentration-union activity gradient. Without causally interpreting our findings, these associations suggest that unions and collective agreements are least likely to be present in markets where potential welfare gains are largest.

5.2. Limitations

Several limitations qualify our findings and suggest avenues for refinement in future research. First, our local labor market definition at the regional and sectoral level is considerably broader than the more spatially disaggregated definitions used in the literature. This is driven by the available industry and spatial information in our datasets. While we argue that this broad definition plausibly underestimates the association between concentration and union activity, the resulting measurement error nevertheless introduces noise that may attenuate our estimates of the concentration-bargaining relationship. The true effect sizes could be larger and, indeed, concentrated in select sub-sectors and provinces or cities.

Second, our concentration measures capture only formal sector employers and employment. The Philippine labor market is characterized by substantial informality, particularly in less urbanized regions. If informal employment serves as a viable outside option that constrains formal employers' monopsony power, then our concentration measures overstate the effective market power that formal-sector workers face, and our estimates would be biased toward zero. Specifically, we would underestimate the observed negative association between labor market concentration and unionization. Conversely, if informal and formal employment are distinct and segmented markets due to differences in job quality, stability, or social protection, as demonstrated in prior literature [Dell'Anno 2021], then our conditional-on-formality estimates appropriately capture the relevant segments for our outcome of interest (e.g., union activity). For future research where the outcome of interest is less confined to either segment, unlike union activity, defining local labor markets would have to account for the informal sector more explicitly.

Third, our analysis is associational rather than causal. While the inclusion of region and industry dummies absorbs time-invariant geographic and sectoral heterogeneity, and the inclusion of controls accounts for market size and wage differentials, we are not definitively ruling out unobserved confounders that drive both concentration and unionization patterns. For instance, areas with weak state capacity or labor institutions might simultaneously exhibit high concentration (due to lax antitrust enforcement) and low unionization (due to weak legal protections or enforcement). Credibly identifying the causal effect of concentration on collective bargaining would require either exogenous variation in market structure generated, for example, by quasi-experimental policy shocks or merger events, or valid instrumental variables that shift concentration without directly affecting unionization propensities. The limited number of local labor markets in our sample and the cross-sectional structure of the data constrain the set of feasible identification strategies. Azar et al. [2020] analyzed thousands of disaggregated labor markets and utilized BLP-style instruments constructed from the characteristics of a firm's competitors in other markets, following Berry, Levinsohn, and Pakes [1995]. In the absence of geocoded firm-level data with detailed characteristics, such approaches are not viable for our analysis. Consequently, future research with more disaggregated market definitions would be better positioned to pursue instrumental variable designs to strengthen causal inference.

Fourth, our outcome measures capture only formal union registration and CBA formation, not the substantive content of collective agreements or the actual wage and benefit gains workers secure through bargaining. A complete assessment of how concentration affects worker welfare through the bargaining channel would require linking concentration measures to the specific provisions negotiated in CBAs, including wage floors, benefit packages, job security protections, and ultimately to worker-level earnings and employment outcomes. While such analysis is beyond the scope of this paper, it represents a critical direction for understanding the full welfare consequences of labor market concentration in settings with active collective bargaining institutions.

5.3. Charting the course for labor market concentration research

Over the past decade, academic and policy discussions have increasingly centered on power asymmetries in labor markets, recognizing that the excessive wage-setting and term-setting power that firms possess generates adverse consequences for wages and employment. A robust strand of the literature has demonstrated that employers possess considerable monopsony-like power that partly accounts for both rising between-worker inequality and declining labor shares of national income [Manning 2021]. However, the labor market monopsony literature remains limited both in the scope of contexts analyzed by being predominantly focused on the United States and Western Europe, and in the types of outcomes considered.

This article makes several contributions that chart directions for future research on labor market concentration in developing country contexts. First, we provide the first estimates of labor market concentration measures for the Philippines using comprehensive administrative data from the Census of Philippine Business and Industry. The CPBI offers advantages over survey-based data sources: universal coverage of formal sector establishments, detailed revenue and employment information enabling multiple concentration metrics, and consistent industry classifications. Our results demonstrate the feasibility and utility of applying the analytical toolkit developed in the US and European labor monopsony literature to emerging market settings where data constraints have historically limited such analysis.

Second, the strong correlation we document between product and labor market concentration raises questions about the coevolution of market power across output and input markets. Does product-market dominance facilitate labor-market monopsony by generating the economic resources to pursue aggressive labor-cost minimization strategies? Do firms strategically pursue market power on both the demand and supply sides simultaneously? Does common ownership or vertical integration create linkages between product and labor market structures? These questions point toward research that integrates labor economics with industrial organization to understand market power more broadly. These policy-relevant questions have been undertaken by the US Department of Treasury [2022], which issued a comprehensive guidance on labor market competition policy, the Federal Trade Commission, which proposed banning noncompete agreements in employment contracts, and other competition authorities in the United Kingdom and Australia that have announced efforts to identify potential harms in labor markets. For the Philippine Competition Commission, assessing employer power not only in downstream product markets but also in upstream labor markets will offer a more comprehensive determination of welfare losses.

By examining both union activity and collective bargaining outcomes, this paper expands research on labor market concentration beyond its predominant focus on wages and employment levels. Much of the existing literature shows that employer concentration suppresses compensation, but less is known about how concentration shapes the conditions under which workers organize and bargain. The re-emergence of this agenda across economics, sociology, and industrial relations points to a broader open question: whether employers' persistent term-setting power is not only a cause of weaker worker voice institutions but also a consequence of their decline.

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Annexes

ANNEX 1. Local labor markets with the highest Employment HHI

Local Labor Market	Employment HHI
Information and Communication—BARMM	1.000
Financial and Insurance Activities—BARMM	1.000
Real Estate Activities—BARMM	1.000
Professional, Scientific and Technical Activities—Zamboanga Peninsula	1.000
Administrative and Support Service Activities—BARMM	1.000
Other Services Activities—Eastern Visayas	1.000
Other Services Activities—SOCCSKSARGEN	1.000
Professional, Scientific and Technical Activities—Eastern Visayas	0.853
Mining and Quarrying—Western Visayas	0.852
Mining and Quarrying—Davao Region	0.835
Mining and Quarrying—Zamboanga Peninsula	0.835
Transport and Storage—BARMM	0.786
Real Estate Activities—Cagayan Valley	0.631
Arts, Entertainment and Recreation—Cagayan Valley	0.626
Information and Communication—Eastern Visayas	0.594

ANNEX 2. Local labor markets with the highest Payroll HHI

Local Labor Market	Payroll HHI
Electricity, Gas, Steam and Air Conditioning Supply—Northern Mindanao	1.000
Electricity, Gas, Steam and Air Conditioning Supply—Davao Region	1.000
Electricity, Gas, Steam and Air Conditioning Supply—National Capital Region	1.000
Water Supply; Sewerage, Waste Management and Remediation Activities—Cagayan Valley	1.000
Water Supply; Sewerage, Waste Management and Remediation Activities—Western Visayas	1.000
Water Supply; Sewerage, Waste Management and Remediation Activities—Zamboanga Peninsula	1.000
Water Supply; Sewerage, Waste Management and Remediation Activities—National Capital Region	1.000

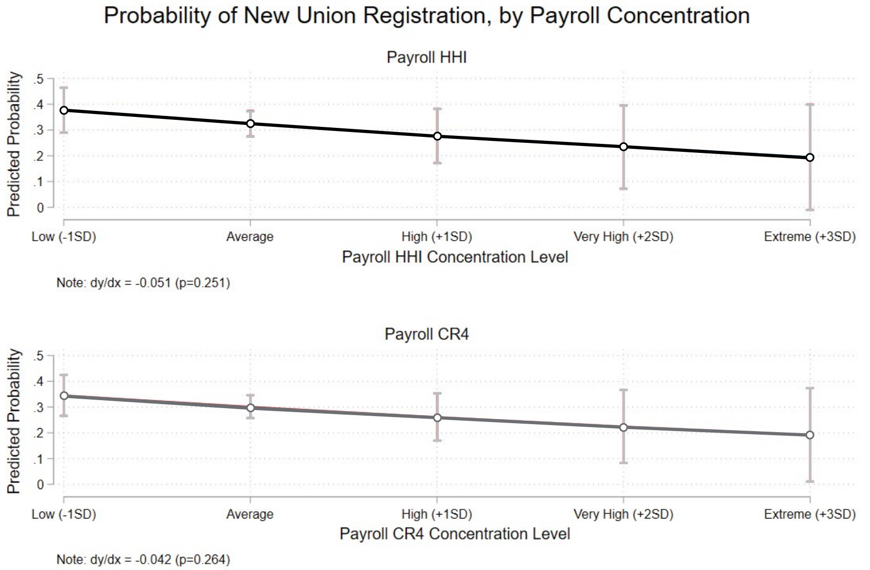
ANNEX 2. Local labor markets with the highest Payroll HHI (continued)

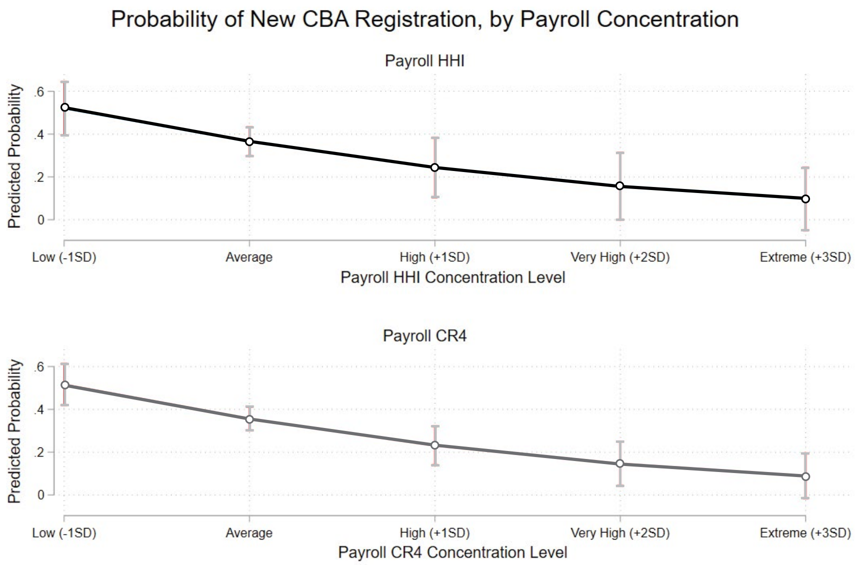
Local Labor Market	Payroll HHI
Water Supply; Sewerage, Waste Management and Remediation Activities—Cordillera Administrative Region	1.000
Water Supply; Sewerage, Waste Management and Remediation Activities—.Caraga	1.000
Information and Communication—BARMM	1.000
Financial and Insurance Activities—BARMM	1.000
Real Estate Activities—BARMM	1.000
Professional, Scientific and Technical Activities—Zamboanga Peninsula	1.000
Administrative and support Service Activities—BARMM	1.000
Other Services Activities—Eastern Visayas	1.000

ANNEX 3. Local labor markets with the highest Revenue HHI

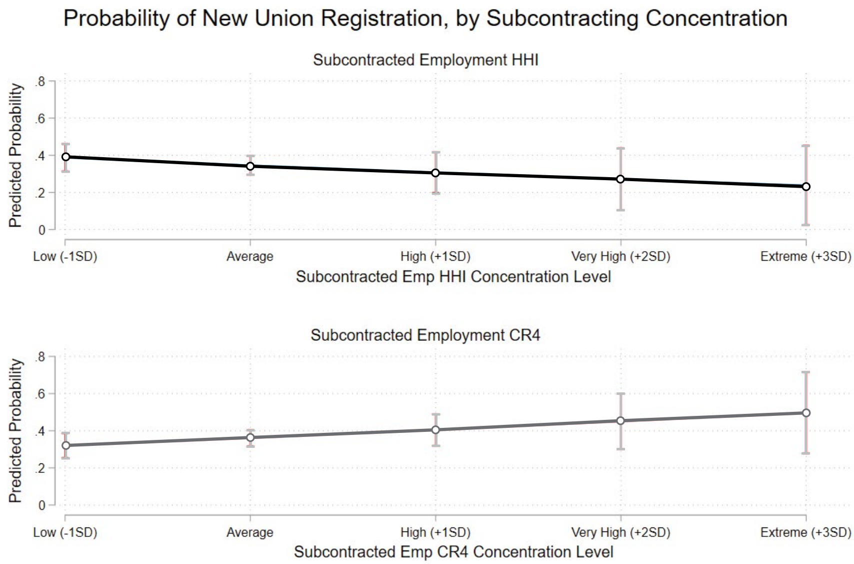
Local Labor Market	Revenue HHI
Information and Communication—BARMM	1.000
Financial and Insurance Activities—BARMM	1.000
Real Estate Activities—BARMM	1.000
Professional, Scientific and Technical Activities—Zamboanga Peninsula	1.000
Administrative and Support Service Activities—BARMM	1.000
Other Services Activities—Eastern Visayas	1.000
Other Services Activities—SOCCSKSARGEN	1.000
Mining and Quarrying—Zamboanga Peninsula	0.998
Mining and Quarrying—Western Visayas	0.969
Mining and Quarrying—Bicol Region	0.906
Arts, Entertainment and Recreation—Eastern Visayas	0.898
Real Estate Activities—Cagayan Valley	0.878
Real Estate Activities—Caraga	0.875
Transport and Storage—BARMM	0.874
Manufacturing—Eastern Visayas	0.843

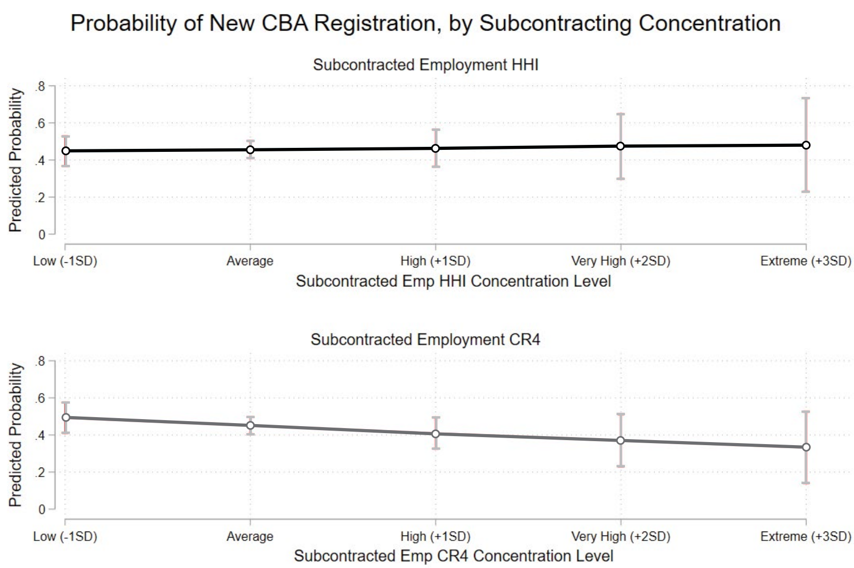
ANNEX 4. Predicted probabilities of new union activity by payroll concentration





ANNEX 5. Predicted probabilities of new union activity by subcontracted employment concentration





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The Grab and Uber merger: a retrospective

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The Grab–Uber merger was a landmark case for the Philippine Competition Commission (PCC). Its decision to approve the merger had a far-reaching impact on passengers and drivers on both platforms. To date, no competitor of the same size and scale as Uber has emerged in the Philippines. Eight years having passed since the merger, it is time to review the approach taken by the PCC in its investigation and approval. This paper examines the appropriateness of reviewing the transaction through the lens of merger control, the gaps in the Philippine merger notification regime with respect to asset-light industries, the definition of the relevant market, and the remedies imposed and their impact on drivers and passengers.

JEL classification: G34, K21, L40
Keywords: antitrust, competition law, merger control, platforms, ride-hailing, Philippines

1. Introduction

The Grab–Uber merger[1] was a landmark case for competition authorities in Southeast Asia. In the Philippines, it was of particular importance because it was the first case subject to *motu proprio* merger review by the Philippine Competition Commission (PCC) rather than to the mandatory merger regime under the Philippine Competition Act. It was also the first major transaction in which competition concerns were highlighted in a market involving platforms.

A significant amount of time has passed since the PCC's approval of the transaction in August 2018. To date, no significant competitor of Grab has emerged. Publicly available evidence indicates that the transaction substantially increased concentration and weakened competitive conditions in the short run. During the review, the PCC publicly stated that Grab's post-transaction market share would

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[1] For the purposes of this discussion, the words "merger" and "acquisition" are used interchangeably. The Philippine Competition Act and its implementing rules and regulations use the same analytical framework in the competition assessment of both classes of transactions.

reach about 93 percent, and, in its subsequent statement of concerns, flagged price increases and service deterioration following Uber's exit. When the transaction was conditionally cleared in August 2018, the PCC described Grab as operating as a "virtual monopolist" [Rey 2018] and imposed commitments intended to maintain market conditions comparable to those that prevailed when Uber still exerted a competitive constraint. For a considerable period after the transaction, the PCC actions indicate that it considered competition in the market as inadequate. In 2019, it stated that the dominance of the merged firm remained unchallenged, that competition had not improved in the ride-hailing market, and later, that there remained insufficient competition in the sector [Desiderio 2019]. More recently, the PCC's continued monitoring of Grab's non-exclusivity and incentive commitments suggests that concerns about limited competitive pressure have not been fully resolved [San Juan 2025]. These conditions make a review of the PCC's approach to its investigation and approval of the Grab–Uber merger warranted.

This paper will explore the Grab–Uber merger, beginning with a background of the ride-hailing business model, followed by a discussion of the timeline of ride-hailing in the Philippines from the entry of market players until the Grab–Uber merger. It will then discuss and review the merger investigation of the PCC, particularly with respect to the following points:

1. whether the Grab–Uber merger was appropriately reviewed through the lens of merger control or if the appropriate approach should have been a review of the transaction as an anti-competitive agreement,
2. gaps of the Philippine merger control regime with respect to the review of transactions in asset-light industries,
3. whether the relevant market as defined by the PCC was appropriate, and
4. whether the remedies sufficiently addressed any competitive concerns brought about by the Grab–Uber deal.

2. Background

2.1. Ride-hailing

Ride-hailing has existed as a model of transport prior to the existence of dedicated digital platforms. Driven by cost and resource savings, as well as the need to maximize the use of existing vehicles, car sharing took the form of carpooling during World War II in North America. Beginning in the 1990s, carpooling transitioned from a system that was dependent on personal networks to a system that "integrated the use of mobile phones, social networking, and the internet with the service they offer" [Li et al. 2018:2]. Ride-hailing allows individuals to access private vehicles for point-to-point transport without bearing the obligations of car ownership. For car owners, ride-hailing allows them to maximize vehicle utilization [Li et al. 2018].

In its contemporary form, ride-hailing functions primarily as a platform-based intermediation service. A ride-hailing application performs the matching function between two distinct yet interdependent user groups: passengers seeking transport and drivers willing to provide it [Li et al. 2018]. The service, therefore, has a two-sided character. The value of the platform to passengers depends in part on driver availability, while its value to drivers depends in part on the passenger availability.

Ride-hailing generally involves the following steps. First, a passenger uses a ride-hailing application on their mobile phone to request a trip which includes the pick-up and drop-off points of the passenger. Second, the fare is computed based on passenger demand and driver supply, depending on the location of the passenger. Third, the passenger then accepts or rejects the fare provided by the application. Fourth, when the fare is accepted, the nearest driver is notified of the trip request. Fifth, the driver can then accept or reject the trip and fare. If accepted, the driver is provided the location of the passenger for pick up. Finally, the driver conveys the passenger to the destination [Lee 2017].

Ride-hailing fares are typically composed of several features. First is the flag-down rate, which is the base fare that a passenger is charged regardless of the distance or duration of a trip. Second is the distance rate, which is the fare charged for each estimated kilometer of a trip. Third is the time charge, which is a charge for every minute that a trip is estimated to take. Finally, there is a surge rate that multiplies the total fare by a certain amount depending on supply and demand conditions [Lee 2017]. From the platform's standpoint, however, the relevant pricing problem is not confined to the fare charged to passengers. The platform also determines the effective terms on which drivers participate, whether through commissions, incentives, or other compensation arrangements.

2.2. Timeline

Grab and Uber were two of the major ride-hailing market players in Southeast Asia at the time of their merger, with the third major regional player being the Indonesian ride-hailing firm Go-Jek. Uber was founded in San Francisco in 2009 and subsequently undertook aggressive global expansion. It launched operations in Southeast Asia, Israel, Russia, China, and India [Dudley et al. 2017].

In 2013, Uber entered the Southeast Asian market. Starting with Singapore, Uber expanded rapidly to other Southeast Asian locations the following year, including Malaysia, Indonesia, the Philippines, and Vietnam. Eventually, it provided services in 45 countries towards the end of 2014, as claimed by the platform [Li et al. 2018].

Upon entering the Philippines, the Land Transportation Franchising and Regulatory Board (LTFRB) initially issued orders for its enforcers to apprehend Uber drivers for not having valid common carrier franchises [Icasiano and Taeihagh 2021].

After public pushback against such apprehensions, the LTFRB announced it would work with Uber to facilitate the regulation of ride-hailing. The LTFRB also stopped apprehending drivers operating under Uber [Icasiano and Taeihagh 2021].

Despite a tenuous relationship with regulators and the traditional taxi industry, Uber grew in Southeast Asia. It announced further expansion in the Philippines in line with the 2015 guidelines for the legalization of ride-hailing services [Camus 2015].

Uber's expansion, however, took place alongside the rise of regional competitors. Grab started as MyTeksi in Malaysia. Initially offering a mobile application for taxi hailing in 2012 [The Star Online 2012], it expanded to provide a private car ride-hailing service called GrabCar, which would eventually be called Grab. In Indonesia, Go-Jek began as a motorbike sharing firm, which eventually entered private car ride-hailing [Porter 2016].

In 2016, the year following the formal regulation of ride-hailing in the Philippines, the LTFRB suspended the acceptance of new ride-hailing vehicle applications due to severe backlogs in application processing [Reuters 2016]. The same year, the LTFRB set a maximum limit on surge pricing for ride-hailing firms at two times the fare. The LTFRB also fixed the distance and time charges set by ride-hailing applications [Cabuenas 2016]. The following year, Uber was suspended from operating for one month after failing to comply with an order from the transport regulator to remove and prevent unaccredited drivers from operating through its application [Icasiano and Taeihagh 2021].

By 2017, Grab reported that it had captured 72 percent of the Southeast Asian ride-hailing market. Further, market research firms found that Grab was the most used ride-hailing application in several Southeast Asian countries [Azman 2017]. Towards the end of that same year, there was speculation that Uber would be exiting the Southeast Asian market after receiving investment from the SoftBank Group, an investor in Uber's rival Grab [Aravindan and Kim 2017].

Uber had initially denied that it was exiting the Southeast Asian market, with its key officers stating in February 2018 that Uber would continue investing therein [Shah 2018]. However, on March 26, 2018, Uber and Grab announced Grab's acquisition of Uber's assets in the Southeast Asian market. As payment, Uber would take a 27.5 percent stake in Grab [Bernabe 2021]. This announcement resulted in scrutiny by antitrust authorities across Southeast Asia [Icasiano and Taeihagh 2021].

In reaction to the Grab–Uber merger, the PCC issued Commission Resolution No. 08-2018 on April 3, 2018, directing its Mergers and Acquisitions Office to investigate the merger and for Grab and Uber to continue operating separately until completion of its investigation. Despite this directive from the PCC, the LTFRB revoked Uber's license to operate and directed it to cease operations [ABS-CBN News 2018a].

Over the course of the investigation, the PCC found that the market share of Grab post-merger would be 93 percent, more than double its 45 percent market share pre-merger, resulting in a near monopoly, with the remaining seven percent of the market share split between several small market players (Cigaral [2018]; Cordero [2018]; Reuters [2018]).

In addition to finding that the merger resulted in a near monopoly, the PCC found that Grab had increased prices between 25 percent and 35 percent from pre-merger levels. Additionally, there was an increase of driver cancellation rates and waiting times for rides [Cahiles-Magkilat 2018].[2]

In August 2018, the Grab–Uber merger was approved by the PCC, subject to various conditions [Icasiano and Taeihagh 2021]. Among those conditions was that the minimum fares of Grab should not increase by more than 22 percent from pre-transaction levels. The PCC also imposed the condition that the electronic receipt issued by Grab should show the fare breakdown of a trip per fare component (i.e., distance charge, time charge, base fare, and surge). Drivers were also prevented from seeing a prospective passenger's destination, with the condition intended to prevent them from discriminating between passengers based on destination (ABS-CBN News [2018b]; Bernabe [2021]). Driver acceptance rates were also mandated to increase from 45 percent to 65 percent within the remedy period [Cahiles-Magkilat 2018].

3. Discussion

3.1. Anti-competitive agreement or merger control?

The Grab–Uber deal was characterized by competition authorities in Southeast Asia, including the Philippines, as a matter to be investigated through the lens of merger control. This characterization was consistent with the form in which the parties publicly presented the transaction. Particularly, Grab announced in March 2018 that it had acquired Uber's Southeast Asian operations and that, as part of the transaction, Uber would take a 27.5 percent stake in Grab, while Uber Chief Executive Officer Dara Khosrowshahi would join Grab's board [Grab 2021]. Shortly thereafter, in April 2018, the PCC announced that it had commenced a *motu proprio* review of the transaction based on its preliminary assessment that the deal could substantially lessen, prevent, or restrict competition.[3]

Notwithstanding this initial characterization, the transaction also lends itself to analysis under the framework of anti-competitive agreements. Former PCC Commissioner Bernabe [2021] notes that the PCC considered whether the

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[2] It should be noted that there is no publicly available data on waiting times pre- and post-merger. While a six to seven percent driver cancellation rate pre-merger was cited in publicly available data, there is no publicly available post-merger data.

[3] See PCC Commission Resolution No. 08-2018.

transaction might also be viewed as a "pay-to-exit" agreement rather than only as a merger. In the present context, such an arrangement would refer to Uber's withdrawal as an independent competitor in Southeast Asia and the receipt of financial compensation for its exit without a hard asset transfer to Grab. This complication is due to the arguably asset-light character of the parties.

The literature classifies platforms as either asset-heavy or asset-light based on their ownership of assets. An asset hub or asset-heavy platform involves the platform operator owning the assets offered on it, with users enjoying the use of such assets for a fee (Lin et al. [2024]; Taeihagh [2017]). On the other hand, a peer-to-peer network or asset-light platform involves matching prospective customers with other platform users who own the assets or provide the services needed by customers (Lin et al. [2024]; Taeihagh [2017]). Using this typology, Grab and Uber would be classified as asset-light platforms: neither platform owned the vehicles used to service customers, being reliant on independent contractors who owned their vehicles to offer their services. With respect to fare payments, platforms and drivers who operate on them share the payments made by passengers on the platform [Ming et al. 2019].

Considering both Grab and Uber may be classified as asset-light platforms, the question arises whether the transaction could rightly be characterized as a merger or acquisition in the conventional sense. Beyond administrative expenses and platform maintenance costs, the assets directly used to provide transportation services to passengers are owned by third-party independent contractors (i.e., drivers and operators). These independent contracts were not transferred to Grab as part of the transaction. Before any transfer of data to Grab, Uber drivers were required to give consent (Grab [n.d.]; Uber [n.d.]). Neither customer accounts nor data were transferred to Grab [Grab n.d.]. As such, no assets, intellectual property, or substantial contracts appear to have been transferred from Uber to Grab as part of the transaction. These features render the transaction less straightforward when viewed through the usual logic of transferring fleets, assets, or even an employed workforce. Viewed from this perspective, the transaction could potentially fall under the prohibition of anti-competitive agreements under the Philippine Competition Act.

> Section 14. Anti-Competitive Agreements. –
> (…)
> (b) The following agreements, between or among competitors which have the object or effect of substantially preventing, restricting or lessening competition shall be prohibited:
> (…)
> (2) **Dividing** or sharing **the market**, whether by volume of sales or purchases, **territory**, type of goods or services, buyers or sellers, or any other means;[4]

[4] Emphasis added.

The underlying assumption of this analysis is that Uber agreed to no longer compete in Southeast Asia, leaving the market to Grab, while Grab, in turn, would not venture into markets where Uber operated, dividing a global market between themselves. Bernabe [2021] explains that this strand of inquiry was not pursued because the Competition Enforcement Office of the PCC, responsible for cases involving anti-competitive agreements, had not yet conducted any significant investigations at the time of the transaction. This consideration was also strategic, as investigations relating to anti-competitive agreements would be long and drawn out, estimated to take at least a two-year period [Bernabe 2021], as opposed to merger control, where the period is estimated to take a maximum of 120 days.[5] The determination of whether this was the appropriate lens through which to review the transaction is important, as the legal consequences for parties differ greatly in merger review and anti-competitive agreements. The main legal consequence if this transaction were characterized as an anti-competitive agreement would be that criminal liability may attach to parties to a market sharing agreement in addition to incurring substantial monetary penalties.[6]

However, as discussed above, the transaction between Grab and Uber does not strictly fall within the typical merger control framework. Rule 2 of the Philippine Competition Act's implementing rules and regulations states that:

> (a) "Acquisition" refers to the purchase or transfer of securities or assets, through contract or other means, for the purpose of obtaining control by:
> (1) One entity of the whole or part of another;
> (2) Two or more entities over another; or
> (3) One or more entities over one or more entities;

Based on a strict reading of this definition, the transaction between Grab and Uber does not appear to qualify as an acquisition. Driver contracts and customer information, arguably the core assets underpinning the platform's service offering, were not transferred as part of the transaction [Grab n.d.]. The issue, therefore, is not whether the transaction involved no transfer at all, but whether conventional asset- and turnover-based framing of acquisitions is well suited to platform transactions in which competition dynamics reside less in physical assets than in user participation, transaction volume, and network effects.

[5] Sec. 13.3, PCC Rules on Merger Procedure. For a *motu proprio* Section 20 merger review, PCC will endeavor to follow the same process for notified mergers, except for the review periods which are 75 days for Phase 1 and 120 days for Phase 2, and subject to the procedure provided in this Section.

[6] Section 30, Philippine Competition Act. Criminal Penalties. An entity that enters into any anti-competitive agreement as covered by Chapter III, Section 14(a) and 14(b) under this Act shall, for each and every violation, be penalized by imprisonment from two to seven years, and a fine of not less than ₱50 million but not more ₱250 million. The penalty of imprisonment shall be imposed upon the responsible officers, and directors of the entity. When the entities involved are juridical persons, the penalty of. imprisonment shall be imposed on its officers, directors, or employees holding managerial positions, who are knowingly and willfully responsible for such violation.

The transaction may still be properly analyzed through the lens of merger control. The structural effect of the transaction was the *de facto* transfer of both drivers and passengers to the Grab platform. The fact that transferring from Uber to Grab was not mandatory, with the transfer contingent on the driver's consent after acquisition, emphasized the voluntary nature of contracts. Uber drivers could not be compelled by either Grab or Uber to enter into a contract with Grab to provide services on the Grab platform; drivers must consent to the contract. In an asset-light platform market, the absence of extensive hard-asset transfer does not preclude a merger-like change in market structure.

An advantage of reviewing the transaction through the lens of merger control is that, unlike anti-competitive agreements, merger review is more permissive in assessing whether the transaction may also generate efficiencies, as opposed to anti-competitive agreements, which may be treated as *per se* inefficient and would nearly always result in consumer harm. In the case of Grab and Uber, a merger may yield efficiencies due to network effects [Vakeel et al. 2021]. It should also be noted that, while few, assets were indeed exchanged during the transaction, with Uber receiving a 27.5 percent stake in Grab's Southeast Asia holding company [Bernabe 2021], ensuring Uber would continue sharing profits in the Southeast Asian market.[7]

The question that this paper explores, therefore, is whether the merger control analysis employed was sufficiently responsive to the economic characteristics of an asset-light, two-sided platform transaction.

3.2. The Philippine merger notification regime and the Grab–Uber transaction

By virtue of the Philippine Competition Act, the Philippines follows a mandatory merger notification regime where parties to a prospective merger or acquisition are prohibited from consummating a transaction until 30 days after notifying the PCC of such transaction, extendible for another 60 days should the PCC determine that a more in-depth review is required. Failure to notify the PCC of such transaction will result in it being declared void.[8]

During the time of Grab's acquisition of Uber's Southeast Asian operations, the notification thresholds were set at ₱5 billion for the size of party test and ₱2 billion for the size of transaction test.[9] Grab and Uber alleged that they failed to meet both the size of party and size of transaction thresholds at the time of the acquisition and were not required to notify the PCC of the acquisition [Bernabe 2021]. The PCC, however, conducted a review of the transaction *motu proprio* by virtue

[7] This same conclusion was also reached by commentators from other jurisdictions, see Khoo, K. [2020] "Anti-competitive mergers in two-sided digital platform markets: the case of Uber-Grab," *Singapore Academy of Law Journal*, 33(Special Issue):202-240.

[8] Section 17, Philippine Competition Act

[9] See PCC Memorandum Circular No. 18-001 in relation to the Implementing Rules and Regulations of Republic Act No. 10667.

of its general power to prohibit acquisitions that substantially prevent, restrict, or lessen competition in a relevant market.[10]

While the transaction was reviewed and remedies were eventually imposed to address competitive concerns arising from it, the transaction had at that time been partially consummated, and Uber, with its license to operate revoked, ceased its operations in the Philippines [Cabuenas 2018]. These circumstances call into question the effectivity of merger notification thresholds as they relate to sharing economy platforms, particularly, asset-light platforms.

Being asset-light platforms, any transaction between Grab and Uber would not easily be captured by asset value thresholds set for traditional industries which typically own their business assets. The splitting of revenues between drivers and the platform would also make it difficult for the transaction to be captured by revenue thresholds for mandatory notification. For mandatory notification, thresholds are based on either asset values in the Philippines or revenues derived by a firm in or from the Philippines. This is provided under Rule 4, Section 3 of the implementing rules and regulations of the Philippine Competition Act:

> Section 3. Thresholds for compulsory notification.
> Parties to a merger or acquisition are required to provide notification when:
> (a) The aggregate annual gross revenues in, into, or from the Philippines, or value of the assets in the Philippines of the ultimate parent entity of at least one of the acquiring or acquired entities, including that of all entities that the ultimate parent entity controls, directly or indirectly, exceeds one billion pesos.
> and
> (b) The value of the transaction exceeds one billion pesos, as determined in subsections (1), (2), (3) or (4), as the case may be.
> (1) With respect to a proposed merger or acquisition of assets in the Philippines if either
> i. the aggregate value of the assets in the Philippines being acquired in the proposed transaction exceeds one billion pesos; or
> ii. the gross revenues generated in the Philippines by assets acquired in the Philippines exceed one billion pesos.

Considering that asset-light platforms only serve as pass-through entities for the revenue share of the asset owner, the merger notification threshold would only consider the service fee derived by the platform as its revenue for purposes of merger notification thresholds. This likelihood of evading mandatory merger notification makes it difficult to review transactions between asset-light platforms. While a transaction being below mandatory notification thresholds does not preclude competition review, a non-notified transaction may already

[10] See PCC Commission Resolution No. 08-2018.

be consummated when it comes to the notice of competition authorities. As noted by commentators:

> [The merging] firms might have undertaken various degrees of integration, perhaps because that was the very point of the merger, or because much time had passed, or because the firms wanted to make subsequent structural separation more difficult. Indeed, it may be the case that the greatest efficiencies and reasons for a merger arise precisely where the integration is most complete, underscoring difficulties in a breakup. In these cases, any breakup would be more akin to the case of restructuring a single integrated company… [Kwoka and Valletti 2021:1293]

As was the case in the acquisition by Grab of Uber's operations, drivers had already transferred from Uber to Grab at the time the transaction was being reviewed by the PCC as it had already been consummated. Uber was in fact already non-operational owing to the revocation of Uber's license to operate in the Philippines [Cabuenas 2018]. Considering this experience, it becomes imperative to review the current merger notification regime where notification thresholds are set uniformly regardless of industry.

Under the Philippine Competition Act, the Commission is specifically allowed to modify thresholds as well as determine criteria for mandatory merger notification:

> Section 12. Powers and Functions. — The Commission shall have original and primary jurisdiction over the enforcement and implementation of the provisions of this Act, and its implementing rules and regulations. The Commission shall exercise the following powers and functions:
> (…)
> (b) Review proposed mergers and acquisitions, **determine thresholds for notification**, determine the requirements and procedures for notification, and upon exercise of its powers to review, prohibit mergers and acquisitions that will substantially prevent, restrict, or lessen competition in the relevant market;
> (…)
> Section 17. Compulsory Notification. – Parties to the merger or acquisition agreement referred to in the preceding section wherein the value of the transaction exceeds one billion pesos are prohibited from consummating their agreement until 30 days after providing notification to the Commission in the form and containing the information specified in the regulations issued by the Commission: Provided, **That the Commission shall promulgate other criteria**, such as increased market share in the relevant market in excess of minimum thresholds, **that may be applied specifically to a sector, or across some or all sectors**, in determining whether parties to a merger or acquisition shall notify the Commission under this Chapter.[11]

[11] Emphasis added.

With this, the Commission may specifically set guidelines for asset-light industries, including platforms beyond asset- or revenue-based thresholds. This would allow *ex ante* review of mergers and acquisitions in platform markets, saving the PCC from the difficulties of reviewing already consummated mergers and acquisitions and increasing the likelihood of preventing a substantial lessening of competition in asset-light industries.

3.3. Market definition

The definition of the relevant market is foundational to any competition analysis. It structures the inquiry into competitive constraints and sets the basis for identifying market power, evaluating harm, and designing appropriate remedies. In the context of platforms, market definition assumes even greater importance because (a) participation on one side of the platform depends on participation on the other, (b) pricing involves multiple instruments rather than a single price, and (c) competitive constraints may operate through interdependent demand rather than through one-sided substitution alone. The approach adopted at this stage, therefore, influences the assessment of competitive effects and the design of interventions.

In its review of the Grab–Uber merger, the PCC defined the relevant product market as the "on-demand private car-based transportation online booking service through a mobile ride-hailing application."[12] This definition excluded traditional forms of transport, such as conventional taxis and public buses, based on limited substitutability. This characterization implicitly categorized Grab and Uber primarily as transportation providers, thus directing the market-definition exercise primarily toward passenger-side substitutability. The analytical focus fell on the passenger-facing service and on the extent to which passengers would substitute for other modes of transport. Driver-side issues remained relevant, but they appeared more indirectly, chiefly in relation to contestability and market entry conditions. In a ride-hailing platform, however, competitive conditions on the passenger side and driver side are jointly determined, so a passenger-centric market definition may not fully capture the competitive mechanism at issue.

Ride-hailing platforms such as Grab and Uber may be better understood as intermediaries rather than transportation providers in the conventional sense. Unlike taxis or bus operators, these platforms typically do not own vehicle fleets or directly employ drivers. Their primary function is to match drivers and passengers using digital infrastructure and algorithmic tools. Platforms are market institutions that set terms of trade, match participants, and determine the allocation of surplus. They enable transactions between distinct user groups by overcoming search frictions and pricing inefficiencies [Spulber 2019]. Their core economic function is thus intermediation rather than transportation *per se*. This distinction affects the identification of competitive constraints because the relevant

[12] PCC Commission Decision No. 26-M-12/2018, August 10, 2018

strategic variables extend beyond passenger fares to include driver compensation, incentives, and platform rules governing participation. Commentators have also expressed this view of platforms, where it has been stated that:

> platforms are active on a single market for two-sided intermediation, rather than separate markets for each side of the underlying commercial activity. This comparatively narrow approach suggests that platforms compete with other platforms providing comparable services—that Uber competes with Lyft, for instance—but do not extend beyond the sharing economy. [Dunne 2018:93]

The conceptual framework for analyzing platform competition can be illustrated through a simplified economic model. Consider a platform operator setting multiple prices and incentives simultaneously to coordinate transactions between passengers and drivers. Let

- P_p be the price charged to passengers,
- S_p be the subsidy or discount provided to passengers,
- P_d be the compensation paid to drivers, and
- S_d be the additional incentives provided to drivers (e.g., promotional payments, bonuses, etc.)

Given these variables, the platform's total profit from facilitating transactions can be expressed as:

$$\Pi = [(P_p - S_p) - (P_d + S_d) - c] \cdot Q(P_p, S_p, P_d, S_d) \tag{1}$$

In the above equation, $Q(\cdot)$ represents the quantity of successful matches between passengers and drivers, and c indicates the per-transaction intermediation cost, including operational and technology-related costs. The term $(P_p - S_p) - (P_d + S_d)$ can be interpreted as the "spread," capturing the net price differential that the platform operator is able to extract per transaction, or the difference between what it collects from passengers (net of discounts) and what it pays out to drivers (inclusive of incentives).

This spread is economically meaningful because it indicates the extent of pricing power and competitive pressure the platform faces. This means that fare increases cannot be evaluated in isolation. A higher fare may reduce passenger participation unless accompanied by larger discounts, promotional subsidies, or better service quality. Similarly, lower driver compensation may discourage supply unless offset by increased incentives. If a platform operator can maintain or increase this spread without causing substantial decreases in user participation on either the driver or passenger side, it possesses significant market power. Conversely, a platform with limited ability to expand this spread faces stronger competitive constraints and lower market power. Competitive constraints are therefore expressed through the platform's ability to manage this spread, rather than through any single price on one side alone.

These features complicate the use of conventional market-definition tools such as the Small but Significant and Non-transitory Increase in Price (SSNIP) test. In standard one-sided settings, the SSNIP test examines whether a hypothetical monopolist could profitably impose a price increase of approximately five to 10 percent without losing enough customers to render the price increase unprofitable. Applied mechanically to ride-hailing platforms, the test would ask whether a hypothetical monopolist could profitably increase the passenger fare, or alternatively reduce driver compensation, holding the other side fixed. That, however, does not correspond to how a ride-hailing platform actually sets prices. Platform operators simultaneously determine passenger fares, driver compensation, and the subsidies or incentives offered on both sides, while participation on each side depends on underlying demand and supply elasticities that the platform cannot directly control. A change on one side, therefore, affects not only direct demand on that side, but also trip volume, participation on the other side, driver utilization, waiting times, cancellations, and demand on the original side through those channels. The same logic applies in reverse to changes on the driver side. A one-sided SSNIP applied only to passenger fares, or only to driver compensation, may therefore yield misleading conclusions because it treats as fixed the very variables that a platform adjusts jointly.

To address this limitation, modified versions of the SSNIP test explicitly incorporating cross-group network effects have been proposed [Filistrucchi et al. 2014]. In these frameworks, the platform facilitates a direct, observable transaction between two distinct user groups. Each side faces a separate price, and the way these prices are distributed is referred to as the price structure. The sum of the two prices constitutes the price level. Because participation on one side depends on the presence and responsiveness of the other, any assessment of pricing must consider not just direct effects on demand, but also how changes in price structure influence overall transaction volume.

For transaction platforms, the SSNIP test should examine whether a hypothetical monopolist could profitably raise the total price level while optimally reallocating prices across both user groups. In practical terms, this requires examining whether the platform could profitably raise passenger fares, reduce driver compensation, reduce subsidies or incentives, or implement some combination of these changes without reducing the volume of completed matches enough to make the strategy unprofitable. The modified test recognizes that the platform's pricing power is not determined by a single price point but by its ability to strike a balance between user acquisition, participation, and surplus extraction across both sides. This approach provides a more accurate basis for defining the relevant market and assessing the competitive constraints faced by platform operators. In certain cases, it may also be appropriate to use a quality-based approach, such as the Small but Significant Non-transitory Decrease in Quality test. By employing these adapted methodologies, competition authorities can better reflect the distinct economic features of platform markets.

Beyond methodological refinements, market definition in platform contexts should not be viewed merely as a boundary-setting exercise for determining substitutability among similar service categories. Rather, market definition should serve as a conceptual framework for understanding how platforms actually operate. In the case of ride-hailing platforms, it should examine how platform operators strategically manage competitive interactions, indirect network effects, multihoming behavior, and switching costs [Franck and Peitz 2021]. Defining the relevant market in a way that explicitly recognizes the platform's role as an intermediary provides a more accurate basis for analyzing how competitive constraints operate in a multi-sided setting.

Under this approach, the relevant product market may be more appropriately described as the "app-based intermediation of on-demand private-car transportation transactions between passengers and drivers through a mobile ride-hailing application." This formulation retains the features emphasized by the PCC—namely, app-based, on-demand, private-car ride-hailing—but clarifies that the service under analysis is not transportation in the abstract. It is the intermediation of a transaction between two distinct user groups. Framed in this way, the market definition is more useful for competitive assessment because it directs attention to the full set of constraints relevant to the platform's conduct: passenger substitution, driver participation, cross-group feedback effects, and the platform's ability to adjust fares, compensation, and incentives jointly. It is also more useful for remedy design because it makes visible the channels through which market power may be exercised, not only through passenger fares, but also through driver-side terms, participation rules, and matching conditions.

A market definition anchored on intermediation also offers a more coherent framework for identifying the mechanisms through which digital platforms exercise market power. This perspective highlights the full set of strategic instruments available to platform operators, including the setting of fares and driver compensation, the calibration of user incentives, the design of contractual terms, and the deployment of algorithmic tools that govern visibility, matching, and access. These instruments determine the allocation of surplus between user groups and shape participation decisions on both sides of the platform. By focusing on how platforms manage interdependent demand, this approach captures the structural dynamics that define competitive constraints. It also reveals how pricing structures and platform rules may be used not only to attract users but also to lock them in, deter switching, and raise barriers to entry in the market.

This framing clarifies how platform design choices may entrench dominance by limiting contestability. For example, a platform that offers targeted driver incentives or exclusivity bonuses can quickly secure a critical mass of supply, reducing the availability of drivers for potential entrants. On the passenger side, promotions or loyalty programs for passengers can reinforce user retention and limit multihoming. These strategies reinforce cross-group dependencies and make it more difficult for competing platforms to reach scale. By treating both passengers and drivers as active participants with distinct incentives and constraints, a market definition grounded in intermediation allows for a more symmetric assessment of harm. It shifts the analytical focus from isolated price changes to the architecture of the matching process itself, where control over participation, surplus allocation, and transaction rules becomes the primary channel through which market power is exercised.

This intermediation-based approach to market definition also has important implications for the design and application of merger thresholds, particularly in asset-light sectors. Digital platforms such as Grab and Uber do not rely on large physical asset bases. Their competitive significance lies in their ability to coordinate transactions and participation across user groups. As a result, transactions involving these firms may not meet the usual revenue or asset thresholds required for mandatory notification, even if the likely competitive effects are substantial. In the Grab–Uber case, the transfer of hard assets was minimal, and no formal acquisition of drivers or passengers took place. Yet from the perspective of intermediation, the transaction resulted to a shift in the surviving firm's ability to extract surplus. These outcomes are not easily captured by traditional metrics focused on asset transfers alone. A market definition that gives weight to intermediation helps make these effects visible and analytically relevant.

This framing supports a more tailored approach to merger notification in platform markets. Where the principal source of market power lies in platform control over coordinated interactions rather than in ownership of physical assets, notification thresholds may need to place greater weight on indicators such as active user base, transaction volume, or share of coordinated interactions. By aligning thresholds with how market power is exercised in practice, competition authorities would be better equipped to detect and review transactions that materially affect competitive conditions, even if they fall outside conventional notification requirements.

3.4. Designing remedies in platform markets

The Grab–Uber merger review conducted by the PCC resulted in a set of behavioral commitments that reflected the Commission's early attempts to regulate market power in a digital platform context. By the time the transaction was provisionally cleared, Uber had already ceased operations in the Philippines, making structural separation or divestiture a difficult remedy to implement. Instead, the Commission cleared the transaction, subject to Grab's compliance with behavioral commitments, which included service quality, fare transparency, pricing, removal of the "see destination" feature, driver and operator non-exclusivity, incentives monitoring, and an improvement plan.

While the PCC's decision[13] did not expressly state the theories of harm, the underlying concerns may be inferred from the commitments and from the PCC's contemporaneous public statements. The PCC emphasized that the commitments were intended to address price increases and service deterioration arising from the merger of the country's two largest ride-hailing applications. It was also stated that the commitments were intended to ensure that the merger would not make it more difficult for new players to enter and expand. These concerns correspond to three theories of harm: unilateral price effects on passengers, unilateral non-price deterioration in service quality, and reduced contestability or foreclosure affecting market entry and expansion.

The first inferred theory of harm is a passenger-side unilateral effects theory. The elimination of Uber as Grab's closest large-scale competitive constraint increased Grab's ability to raise passenger fares. This concern is reflected in the pricing commitment, which required Grab's pricing behavior to remain comparable to pre-transaction conditions and imposed penalties on identified trips with extraordinary deviations with no sufficient justification.

The second inferred theory of harm is unilateral non-price deterioration. The service quality commitment required Grab to restore pre-transaction market averages for acceptance and cancellation rates and response time to passenger complaints. The removal of the "see destination" feature for drivers with low acceptance rates also addressed service deterioration associated with selective acceptance, cancellations, and passenger discrimination by destination.

The third inferred theory of harm concerns foreclosure and reduced contestability. The PCC required Grab to refrain from introducing policies that would make drivers or operators exclusive to Grab and allowed existing Grab drivers and operators to register with and operate under other platforms or competitors through multihoming. The incentives monitoring commitment reflected the Commission's recognition that driver incentives could, in practice, induce exclusivity and thereby affect competitors' conditions of entry and ability to expand. This part of the remedy package is particularly significant because it shows that the driver side was not ignored. The driver side, however, entered primarily as a condition for rival entry and expansion, rather than as a direct concern of unilateral effects arising from the merged platform's ability to alter driver-side remuneration or participation terms.

The design of the actual remedies is consistent with the relevant market definition adopted by the PCC. Since the relevant product market was defined as an on-demand private car-based transportation online booking service through a mobile ride-hailing application, the most immediate remedial focus fell on passenger-facing outcomes: fare levels, fare transparency, acceptance rates, cancellation rates, waiting times, and complaint handling. Driver-side measures were framed mainly as contestability safeguards. This link between market

[13] See Commission Decision No. 26-M-12/2018

definition, theories of harm, and remedies is important. A passenger-centric market definition naturally produces remedies directed at passenger prices and service quality, with driver-side terms treated mainly insofar as they affect the ability of rival platforms to obtain or attract drivers.

The subsequent operation of the commitments demonstrates both their value and their limits. The commitments created an enforceable framework and were not merely aspirational. In 2019, the PCC extended Grab's commitment period after finding that the merged firm's dominance remained largely unchallenged and that competition in the ride-hailing market had not improved [Desiderio 2019]. Later that same year, the PCC imposed fines on Grab for violating price and service-quality commitments during the fourth quarter of the initial undertaking, including extraordinary deviations from pricing commitments and driver cancellations above the committed level [Aguilar 2019]. In 2025, the PCC continued to monitor Grab's driver incentive schemes to assess whether they discouraged drivers and operators from joining competing platforms [San Juan 2025]. These subsequent actions indicate that the original remedies supplied a basis for enforcement, while also showing that the initial package did not restore competitive conditions within the original monitoring period.

An intermediation-based market definition would likely have led to a more nuanced and holistic remedial framework. Under the alternative definition proposed in the preceding section, the relevant product market would be understood as the app-based intermediation of on-demand private-car transportation transactions between passengers and drivers through a mobile ride-hailing application. This framing preserves the PCC's focus on app-based private-car ride-hailing, while placing the platform's matching and governance function at the center of the analysis. Theories of harm would then be organized around the platform's ability to coordinate both sides of the transaction, set the price structure, allocate surplus, and govern participation by both passengers and drivers.

The first category of remedies under this approach would continue to address passenger-side unilateral effects. Fare commitments, fare transparency, acceptance rates, cancellation rates, waiting times, and complaint-response metrics remain relevant because they directly affect passenger welfare. The PCC's existing commitments were therefore appropriate as a starting point. Their limitation lies in the fact that they monitor only part of the platform's pricing and quality decisions. A platform may satisfy passenger fare commitments while changing driver payouts, commissions, incentive thresholds, or trip-allocation rules in ways that alter the overall distribution of surplus across the platform. In a two-sided transaction platform, passenger-facing commitments provide necessary but incomplete protection because they ignore one of the distinct user groups of the platform—the drivers.

A second category of remedies would concern the platform's price structure, particularly the spread between what passengers pay and what drivers effectively receive. The justification for spread monitoring follows directly from the modified SSNIP framework discussed earlier. If market power in a transaction platform is assessed by asking whether the platform can profitably increase the overall price level or widen its spread while adjusting the price structure across both sides, remedy design should monitor the same variables through which that power is exercised. Passenger fare control addresses one component of the price structure. Spread monitoring would complement passenger fare controls by making it possible to determine whether stability in passenger fares is accompanied by a deterioration in driver-side terms.

Such a remedy would involve monitoring rather than a general cap on platform margins. A practicable approach would require periodic reporting of gross passenger payments, discounts, surge components, platform commissions, driver payouts, and incentive payments. This information would allow the monitor or regulator to observe whether the platform was increasing its take from transactions by shifting costs to passengers, drivers, or both. Compared with passenger-fare control alone, spread monitoring would provide a fuller account of platform-wide surplus extraction and would reduce the risk that compliance with passenger-facing commitments masks worsening conditions on the driver side.

A third category of remedies would address driver-side unilateral effects. Under the actual framework, drivers were treated mainly as a factor in entry and expansion. Under an intermediation-based approach, drivers would also be treated as a user group whose terms of participation may deteriorate after the elimination of Uber as a competing platform. Drivers participate under platform-determined terms, including commissions, bonuses, incentive thresholds, cancellation rules, ratings, and trip allocation. A more developed remedy could therefore require reporting of effective driver remuneration and prior notice or review of material changes in commission rates, incentive structures, or qualification rules. It bears emphasis that such measures should not amount to direct regulation of driver compensation rates. Their function would be to detect whether the merged platform was worsening driver-side terms in ways that could reduce driver welfare and, indirectly, passenger-side service quality.

A fourth category of remedies would address foreclosure and reduced contestability. Driver incentives require careful treatment in this respect. Incentives can improve welfare when they attract drivers, increase availability, reduce waiting times, or improve geographic coverage. Some incentive structures may also discourage multihoming, thereby reducing the ability of rival platforms to build scale. The relevant remedial inquiry should focus on incentive design. Transparent, incremental, and broadly attainable incentives are less likely to impair competition. Retroactive threshold bonuses, steep loyalty rewards, or rules that make partial diversion to rival platforms commercially unattractive may operate as *de facto* exclusivity mechanisms. A targeted remedy could make such incentive structures auditable by the monitor or regulator and require justification for changes in material incentives that could affect multihoming or entry conditions. This approach would preserve competition for drivers while reducing the risk that incentive schemes become exclusionary.

A fifth category of remedies would concern non-price effects and algorithmic governance. The PCC's actual commitments addressed service quality through acceptance rates, cancellation rates, complaint-response metrics, and removal of the "see destination" feature. These measures were administrable because they relied on observable outcomes. Platform quality, however, is also shaped by less visible rules governing pricing, dispatch, matching, incentive eligibility, and trip allocation. A more platform-specific remedy could require retained audit logs for material changes to pricing, dispatch, and incentive rules accessible to the monitor or regulator. This could be done without requiring public disclosure of proprietary algorithms. Its value would lie in improving verifiability and helping distinguish ordinary operational adjustments from changes that worsen user outcomes under reduced competitive constraints.

Finally, contestability remedies could be supplemented by measures to reduce switching costs. The actual package relied mainly on non-exclusivity and incentives monitoring to preserve entry conditions. An intermediation-based approach would also consider whether passengers and drivers remain dependent on Grab because their ratings, trip histories, and other reputation metrics are platform-specific. A remedy that provides for the portability of user data between Grab and a potential rival could lower switching costs for a platform user. While a portability remedy covering user data would not guarantee a new rival's successful entry, it could reduce the cost of trying rival platforms and make multihoming more practicable. In a market where effective entry requires scale on both sides, lower switching costs may improve the conditions under which rival platforms can expand.

The contrast between the actual remedies and the intermediation-based alternatives can therefore be stated in terms of how each set of remedies maps onto the relevant theories of harm. The PCC's fare and service-quality commitments corresponded to passenger-side unilateral effects and non-price deterioration. Its non-exclusivity and incentives-monitoring commitments corresponded to reduced contestability and potential foreclosure. An intermediation-based approach would retain those elements, while adding closer monitoring of the platform's price structure, driver-side remuneration, incentive design, and internal governance rules. This approach would also account for the cross-group constraints on the exercise of market power. Because successful transactions require the participation of both passengers and drivers, attempts to expand the spread through fare increases, lower driver compensation, reduced subsidies, or tighter incentive rules may reduce overall match volume if either side becomes less willing to participate. Remedies designed with this feature in mind would better reflect both sides of platform power: the ability to extract surplus throughout the transaction and the structural limits imposed by interdependent participation by passengers and drivers.

4. Conclusion

The Grab–Uber transaction marked a pivotal moment for Philippine competition enforcement in platform markets. The PCC's decision to review the case under merger control was defensible, particularly given the public form of the transaction, Uber's exit from Southeast Asia, and the structural change that followed in the Philippine ride-hailing market. At the same time, certain features of the transaction also raised questions that could be examined through the framework of anti-competitive agreements. Uber's exit from independent competition, receiving compensation without an actual transfer of assets to Grab, gave the transaction the characteristics of a pay-to-exit arrangement. This does not render the merger control framework invalid, but it highlights that despite the absence of extensive hard-asset transfer, a merger-like change in market structure can still occur. Regardless of the legal framing, the central competition concern was the consolidation of intermediation power in a single platform and the resulting ability to influence participation, pricing, and surplus allocation across distinct user groups.

The case also illustrates the limits of conventional merger notification thresholds when applied to asset-light platform markets. Grab and Uber did not rely on large physical asset bases or vertically integrated vehicle fleets. Their competitive significance lay in their ability to coordinate transactions between passengers and drivers, attract participation on both sides, and operate at scale. This made the transaction less visible to asset- and revenue-based notification thresholds, even though its competitive effects were substantial. The experience therefore supports closer consideration of supplementary notification criteria for digital and asset-light sectors, including indicators such as active users, transaction volume, and the share of coordinated interactions.

Throughout the merger review, the PCC adopted a market definition that recognized the app-based nature of the service but framed the relevant product primarily as an online booking service for private-car transportation. This formulation captured an important feature of ride-hailing, namely that transactions are arranged through a mobile platform, but it placed greater analytical weight on the passenger-facing transport service than on the platform's role as an intermediary between passengers and drivers. This framing shaped both the identification of the theories of harm and the design of remedies. The analysis centered on potential fare increases and service deterioration for passengers, with driver-side issues treated mainly insofar as they affected entry and contestability.

As discussed in this paper, ride-hailing platforms are better understood as intermediaries that match and facilitate transactions between passengers and drivers using digital infrastructure, pricing rules, incentives, and algorithmic tools. This distinction matters because the platform does not merely set passenger fares; it also determines driver-side terms, incentive structures, matching conditions, and allocation of surplus across both sides of the transaction.

Adopting a market definition grounded in intermediation would have provided a more complete basis for assessing market power. It would have highlighted the platform's ability to manage the price structure, including the spread between net passenger payments and effective driver remuneration, while sustaining transaction volume. This framing reveals competitive concerns that may not be fully captured by monitoring passenger fares alone. Changes in fare components, driver incentives, commission policies, access rules, and matching conditions may shape user behavior, affect multihoming, reinforce switching costs, and influence rivals' ability to enter or expand. The modified SSNIP framework and the focus on price structure, therefore, retain an analysis of substitutability but also place that analysis within the actual economic structure of a two-sided transaction platform.

The same framework has implications for remedy design. The PCC's actual commitments addressed identifiable theories of harm: passenger-side price increases, service-quality deterioration, and reduced contestability through driver or operator lock-in. These commitments created an enforceable framework and provided a basis for monitoring and sanctions. An intermediation-based approach would have retained fare and service-quality commitments, while adding closer monitoring of the platform's spread, effective driver remuneration, incentive design, algorithmic governance, and data portability. These additional measures need not entail direct regulation of platform margins or driver compensation. Their value would come from improving visibility over how market power is exercised across both sides of the platform and from aligning contestability remedies more closely with the mechanisms of entry and expansion.

Lessons from the Grab and Uber merger remain relevant. As platform-based business models continue to expand across sectors, competition authorities should refine their analytical frameworks and enforcement tools. This paper has argued that understanding platforms as intermediaries provides a more coherent basis for defining markets, assessing market power, and designing remedies. Recognizing the multi-sided nature of platform competition is therefore essential for identifying the full range of potential harms and for crafting interventions that help sustain healthy market competition in platform markets.

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Multihoming and platform choice in online food delivery

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This paper examines multihoming in the Philippine online food delivery (OFD) market using two original cross-sectional surveys of users and delivery riders. We distinguish two margins of platform participation: multihoming as a margin of engagement and single-homing as a margin of specialization. On the user side, multihoming is more common among users with higher delivery demand, as spreading orders across platforms becomes attractive when demand is frequent enough to justify using two apps. Conditional on single-homing, platform choice is shaped by a monetary service dimension: users in areas with larger rider networks are more likely to choose GrabFood, while those in areas with larger restaurant networks are less likely to do so. Loyalty also remains a strong sorting device. On the rider side, multihoming is concentrated in thicker local demand environments and is less prevalent among riders who report insufficient ride opportunities on competing apps. Conditional on single-homing, platform choice reflects the way platforms bundle demand, compensation, and administrative requirements, rather than differences in market size alone.

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1. Introduction

The online food delivery (OFD) market in the Philippines is expanding rapidly, reshaping how consumers access restaurant and prepared meals. Valued at about US$4.34 billion in 2024, it is projected to reach US$10.33 billion by 2033, corresponding to a compound annual growth rate of 10.11 percent [IMARC Group 2024]. Urbanization, smartphone use, digital payments, and increasing demand for convenience drive growth. At the same time, competition among third-party aggregators, restaurant-delivery services, and cloud kitchens has intensified around speed, user experience, and affordability.

Technological change and internet penetration have disrupted the traditional restaurant ordering and delivery process, enabling OFD platforms such as *foodpanda* and GrabFood to flourish. In these platforms, delivery riders play a pivotal role in linking consumers and restaurants. Platform success depends on maintaining a sufficiently large restaurant base and a dense rider network to ensure timely deliveries and reliable service. As in other multisided platform markets, the value created on one side depends on participation on the others, so indirect network effects are central to platform competition.

A central feature of competition in this environment is multihoming, which is defined as the decision of market participants to join or use more than one competing platform. Consumers may rely on several apps to compare prices, promotions, and delivery times. Riders may work across platforms to increase earnings and flexibility. Restaurants may list on multiple platforms to expand demand. Multihoming matters because it affects the extent to which platforms lock in users and providers, shape entry conditions, and build or defend market power. When multihoming is widespread, platforms face stronger competitive discipline, and entry barriers are generally lower. When it is limited, platforms can more easily insulate themselves from rivalry and reinforce their position through switching frictions, loyalty mechanisms, or other forms of lock-in.

Against this background, our paper studies two related empirical questions. First, which observable price, network, switching-friction, and individual characteristics are associated with multihoming among consumers and delivery riders? Second, conditional on single-homing, which characteristics are associated with choosing GrabFood rather than *foodpanda*? This distinction separates the diversification margin from the platform-specialization margin and allows the analysis to ask whether the same variables organize both decisions.

To address these questions, we analyze two original survey datasets capturing the preferences and behaviors of both consumers and delivery riders in the Philippines. The empirical analysis uses an economics-first variable selection rule and estimates two sets of side-specific binary logit models: one for multihoming versus single-homing and one for GrabFood versus *foodpanda* among single-homers. Because the data are cross-sectional and the key regressors are equilibrium outcomes, we interpret the estimates as descriptive conditional associations rather than causal effects, and we explicitly discuss the endogeneity problem in the paper.

This study contributes to the literature on platform economics and multisided markets by providing descriptive evidence on the correlates of multihoming and single-platform specialization in an emerging-market OFD setting. Existing work on OFD has focused primarily on adoption, usage intention, service quality, and customer satisfaction, whereas direct evidence on homing decisions remains comparatively limited. Our paper adds to this literature by examining users and riders jointly and by distinguishing between the decision to multihome and the decision of which platform to choose when single-homing.

The main empirical patterns reveal two distinct margins of platform participation: multihoming as a margin of engagement and single-homing as a margin of specialization. On the user side, multihoming becomes more attractive when delivery demand is frequent enough to justify maintaining connections with two apps and when the user's outside option set is thin enough that the second connection adds value. In that sense, multihoming reflects both usage intensity and a willingness to keep alternatives open. Conditional on single-homing, GrabFood use is shaped by a monetary service dimension: users in areas with larger rider networks are more likely to choose GrabFood, while those in areas with larger restaurant networks are less likely to do so. Loyalty also remains a strong sorting device. On the rider side, multihoming responds to whether the local market offers enough incremental business to justify keeping a second app active, whereas single-homing reflects how each platform bundles demand, compensation, and administrative requirements. The two decisions are therefore related but distinct: one concerns diversification across competing platforms, while the other concerns specialization on the platform that best matches the rider's expected earnings and working conditions.

Although the analysis is grounded in the Philippine OFD market, the distinction between multihoming and conditional platform choice is relevant for a broader set of digital platform markets in which switching costs, indirect network effects, and user lock-in shape competition and contestability.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature on platform competition and discusses the key regulatory frameworks, with particular emphasis on research related to OFD. Section 3 presents the empirical model. Section 4 introduces the survey datasets used in the analysis. Section 5 reports the main empirical findings on multihoming and conditional platform choice. Finally, Section 6 concludes with a discussion of the implications of our findings for theory, practice, and competition policy.

2. Literature review and regulation

OFD platforms are multisided intermediaries that coordinate interactions among consumers, restaurants, and delivery workers. As in other platform markets, participation on one side affects the value created on the other side, so indirect network effects and price structure are central to market outcomes. The core insight of the economics of platforms is that platforms do not simply choose a single price; they must simultaneously attract multiple sides and determine how total charges are allocated among them (Rochet and Tirole [2003]; Armstrong [2006]; Rysman [2009]; Weyl [2010]). This logic is especially relevant in OFD, where consumer value depends on restaurant variety and delivery performance, restaurant value depends on access to demand and logistics, and rider value depends on order flow and earnings opportunities.

A relevant layer of analysis concerns homing decisions. Platform users may be single-homing on one platform or multihoming across several platforms, and this choice shapes equilibrium fees, platform differentiation, and market contestability. Seminal work shows why nonexclusive intermediation may emerge, how competitive bottlenecks arise when one side multihomes and the other single-homes, and why exclusivity can become strategically valuable. Subsequent contributions also show that the effects of multihoming on prices, profits, and welfare are not monotonic; they depend on which side multihomes, on homing costs, and on whether homing decisions are endogenous.[1] Empirical work outside of OFD confirms that multihoming matters for competition. Studies of video game consoles, newspapers, and daily deals platforms show that multihoming affects platform sales, responses to entry, and the effectiveness of information design. More broadly, this literature highlights that multihoming is not just a behavioral residual: it is a market-structuring variable that shapes rivalry and platform incentives (Landsman and Stremersch [2011]; Park et al. [2021]; Li and Zhu [2021]).

The OFD literature has grown rapidly, but systematic reviews show that it remains concentrated mainly on consumer adoption, usage intention, satisfaction, trust, perceived value, and loyalty. Shankar et al. [2022] and Shroff et al. [2022] document that much of this literature relies on survey-based designs and technology-adoption frameworks, including the Unified Theory of Acceptance and Use of Technology, the Theory of Planned Behavior, and the Technology Acceptance Model. Similarly, the meta-analysis by Shankar et al. [2024] synthesizes OFD research primarily around consumers' intentions to use delivery platforms and their post-adoption evaluations of service quality and platform value. These contributions provide an important account of why

[1] The literature on the role of homing decisions on market equilibrium is well developed. See Caillaud and Jullien [2003], Armstrong and Wright [2007], Belleflamme and Peitz [2019], Jeitschko and Tremblay [2020], Bakos and Halaburda [2020], and Teh et al. [2023], among others.

consumers adopt and continue using OFD services. However, they do not place homing decisions at the center of the analysis: whether users, riders, or other platform participants single-home or multihome across competing OFD platforms remains comparatively underexplored. This paper addresses that gap by centering the analysis on homing decisions, examining the determinants of single-homing and multihoming and their implications for platform competition in a multisided OFD market.

A smaller but growing body of literature in economics and operations management studies OFD as a platform ecosystem involving restaurants, logistics, and contractual design. Li and Wang [2025a] show that on-demand delivery platforms can increase restaurants' total takeout sales and generate positive spillovers to dine-in visits, although the gains are substantially larger for chains than for independent restaurants. Additionally, Li and Wang [2025b] study commission-fee caps and show that regulations intended to help independent restaurants can backfire when platforms respond by changing recommendations and shifting costs onto consumers. Related work examines restaurant-platform conflict and coordination: Feldman et al. [2023] analyze contractual tensions between restaurants and delivery platforms, while Mayya and Li [2025] show that adding noncontracted restaurants can generate positive spillovers for platform growth. Oh et al. [2026] further argue that current commission arrangements can distort restaurant-platform incentives and that broader sharing of delivery costs and fees can improve efficiency. This literature is relevant to our paper because it treats OFD as a multi-sided platform ecosystem rather than a simple delivery service. However, its main focus is the restaurant-platform relationship, commission design, and operational coordination. In contrast, our analysis shifts attention to the user and rider sides and studies how prices, network density, and loyalty strategies are associated with single-homing and multihoming decisions.

Another stream studies regulation and distributional trade-offs within the OFD ecosystem. Recent models show that wage-floor regulation may improve delivery-worker outcomes under some conditions, albeit at the expense of other stakeholders. On the other hand, commission-cap policies can improve restaurant revenues and, in some settings, ecosystem welfare. Related work also shows that food delivery should often be analyzed within a broader multisided mobility and logistics environment because integration with ride-sourcing can alter equilibrium outcomes (Liu and Li [2023]; Ji et al. [2024]). Relative to these strands, direct evidence on multihoming in OFD remains limited, especially when user-side and rider-side homing decisions are studied jointly. On the demand side, Singh et al. [2022] explicitly describe consumer multihoming on food platforms as underexplored. On the supply side, adjacent evidence from ride-sourcing shows that multihoming and switching are shaped by earnings prospects, bonus schemes, waiting and dispatch frictions, and nontrivial switching costs. Passenger-side loyalty work in ridesharing likewise suggests that platform partnerships and loyalty mechanisms can reduce multihoming (Yu et al. [2021]; Guo et al. [2023]; Valderrama and Cameron [2023]). Taken together, this adjacent evidence suggests that OFD multihoming should be studied as a strategic response to local network density, earnings opportunities, switching frictions, and loyalty instruments rather than as a purely residual behavioral outcome.

The preceding discussion also has direct relevance for competition policy. The European Commission's Digital Markets Act (DMA) of 2022 establishes a regulatory framework to make digital platform markets fairer and more contestable, reflecting a broader policy concern that gatekeeper platforms may use network effects, switching costs, and ecosystem control to entrench their positions [European Commission 2024]. In the OFD sector, recent European enforcement actions illustrate that these concerns are not merely theoretical. In 2024, the European Commission opened an investigation into possible anticompetitive agreements between Delivery Hero and Glovo, including concerns related to market allocation, commercially sensitive information, and no-poach arrangements [European Commission 2024]. The subsequent Commission decision in the Food Delivery Services case further confirms the competition relevance of labor-market restraints and coordination between competing food-delivery platforms [European Commission 2025]. In the Philippine context, the Philippine Competition Commission's conditional approval of Mynt's acquisition of ECPay[2] shows that multisided digital ecosystems are also being scrutinized under merger control and behavioral commitments, even beyond the narrowly defined OFD sector [Philippine Competition Commission 2025]. These policy developments reinforce the importance of studying how platform strategies affect contestability.

Against this background, our paper contributes by examining multihoming jointly on the user and rider sides of the Philippine OFD market, whereas much of the existing OFD literature focuses either on consumer adoption outcomes or on restaurant-platform relations. By integrating survey data with indicators of local network structure, price and income metrics, and measures of platform loyalty, the paper directly addresses the channels through which platforms influence contestability and lock-in in a rapidly expanding digital market.

3. Empirical model

The empirical analysis is organized around two distinct decisions, which we model within a random utility framework. Agents first decide whether to multihome across online delivery services or instead concentrate on one platform. Conditional on single-homing, they then choose which platform to join. This sequential structure reflects the idea that the determinants of diversification need

[2] Mynt, the parent-company of GCash, acquired ECPay, a payment-processing company, in 2025 after going through an antitrust review by the PCC.

not coincide with those governing specialization. In particular, the variables that affect the decision to multihome may differ from those that affect platform choice, as we explain in the next section.

In the first stage, agent a of type $j \in \{user, rider\}$ chooses between multihoming (M) and single-homing (S). Let the latent utilities be

$$U_{ajM} = V_{ajM} + \eta_{ajM}\,,\; U_{ajS} = V_{ajS} + \eta_{ajS}\,, \tag{1}$$

where the observable components, interacted with their coefficients, are generated by the additive terms,

$$V_{ajM} = \alpha_{jM} + P_{aj}\beta_{jM} + N_{al}\gamma_{jM} + S_{aj}\delta_{jM} + X_{aj}\theta_{jM}\,,$$

$$V_{ajS} = \alpha_{jS} + P_{aj}\beta_{jS} + N_{al}\gamma_{jS} + S_{aj}\delta_{jS} + X_{aj}\theta_{jS}. \tag{2}$$

Here, P_{aj} collects price or expenditure variables, N_{al} captures local indirect network conditions in area l, S_{aj} denotes platform strategy or switching-cost variables, and X_{aj} contains a compact set of individual controls. Importantly, the variables affecting multihoming need not be the same as those affecting the platform-choice margin, and the corresponding coefficients are therefore allowed to differ across the two utilities. The agent chooses to multihome if $U_{ajM} \geq U_{ajS}$.

Conditional on single-homing, the agent chooses between platform G (GrabFood) and platform F (*foodpanda*). The latent utilities for the second-stage choice are

$$U_{ajG} = W_{ajG} + \varepsilon_{ajG}\,,\; U_{ajF} = W_{ajF} + \varepsilon_{ajF}\,, \tag{3}$$

where the observable components correspond to the additive terms,

$$W_{ajG} = \tilde{\alpha}_{jG} + \tilde{P}_{aj}\tilde{\beta}_{jG} + \tilde{N}_{al}\tilde{\gamma}_{jG} + \tilde{S}_{aj}\tilde{\delta}_{jG} + \tilde{X}_{aj}\tilde{\theta}_{jG}\,,$$

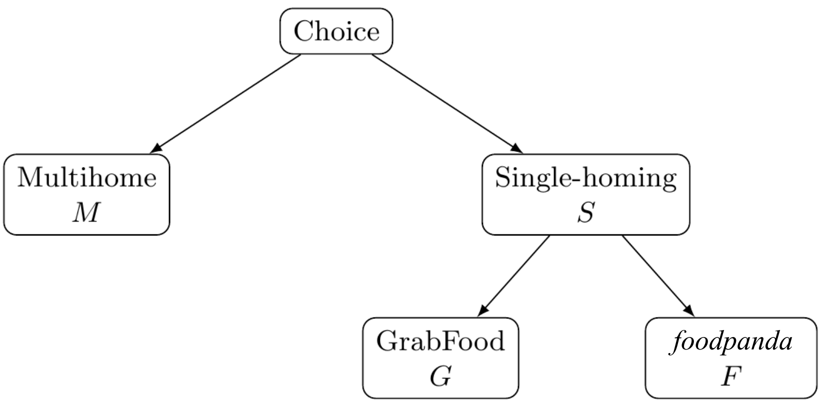
$$W_{ajF} = \tilde{\alpha}_{jF} + \tilde{P}_{aj}\tilde{\beta}_{jF} + \tilde{N}_{al}\tilde{\gamma}_{jF} + \tilde{S}_{aj}\tilde{\delta}_{jF} + \tilde{X}_{aj}\tilde{\theta}_{jF}\,. \tag{4}$$

Again, the covariates relevant for platform choice may differ from those that govern the multihoming decision (hence denoted with tilde), and the coefficients are allowed to vary across platforms. An agent with $U_{ajM} < U_{ajS}$ chooses GrabFood if $U_{ajG} \geq U_{ajF}$.

A useful way to interpret the structure is as a sequential choice tree, as depicted in Figure 1. This tree highlights that platform choice is observed only for agents who single-home, so the second-stage decision is conditional on the first-stage outcome. The two utilities are also potentially correlated through unobserved components. For instance, an agent with a latent preference for flexibility or a stronger outside option may be more likely to multihome and also have systematically different platform preferences when single-homing. Such a correlation suggests that the two equations may not be fully separable in practice.

Empirically, this structure can be estimated in two ways. A first approach is to estimate two independent logit (or probit) models: one for multihoming versus single-homing, and one for the choice between GrabFood and *foodpanda* among single-homers. It is easy to implement, but it treats the two decisions as conditionally independent. A second approach is to use a nested logit specification, in which the single-homing alternatives are grouped in a nest. This allows for correlated unobservables within the second-stage choice and offers a more flexible representation of substitution patterns. In both cases, the model should be interpreted as describing conditional associations rather than causal effects. In our main empirical analysis, we use a two-independent-logit approach and report the nested-logit estimates in Annex 1. The main reason is that our data are more consistent with a two-logit specification, as the nested-logit model estimates a correlation of one.

FIGURE 1. Sequential choice



The two independent logit approach does not allow us to identify all coefficients in both the multihoming and single-homing equations, nor in the GrabFood and *foodpanda* equations. We therefore normalize the model by setting the coefficients with subscript S in Equation (2) and those with subscript F in Equation (4) to zero and interpret the coefficients and marginal effects with respect to that reference choice.

4. Data

The empirical question is which observable characteristics are associated with the decision to multihome, and, conditional on single-homing and the choice of one platform, which observable characteristics explain the choice of that platform over the other.

4.1. Sample

To study those margins directly, we use two original survey datasets collected in major Philippine cities between December 16 and 24, 2023.[3] The surveys were commissioned by the Philippine Competition Commission and were designed to capture the two sides of the platform interaction that are central to the paper: users who place food-delivery orders and riders who supply delivery services. Interviewers completed 700 face-to-face interviews in total, 500 with users and 200 with riders, with response rates among eligible participants of 45.21 percent and 60.42 percent, respectively. Full details of the survey instrument and design are provided in Annex 2.

The analysis focuses on the online platforms *foodpanda* and GrabFood, which define the economically relevant competitive margin in the sample. Based on the completed interviews, we exclude respondents outside the relevant food-delivery choice set, respondents associated only with niche or rarely observed platforms, and observations with missing variables required for the maintained specifications. These restrictions leave 386 users and 156 riders, so the analytic sample retains 77.2 percent of completed user interviews and 78.0 percent of completed rider interviews. The resulting samples are large enough to study both multihoming and conditional platform affiliation on the user side, but much thinner on the rider multihoming margin, where only 16 respondents report multihoming behavior. That asymmetry already suggests that the economics of platform participation differs across the two sides of the market and motivates the paper's separate user and rider specifications.

Table 1 provides the first stylized fact of the paper. Panel A reports user counts by area, Panel B reports rider counts by area, and Panel C records response and sample-accounting rates. Multihoming is common on the user side but much less common on the rider side. Among users, 139 of 386 respondents, or 36.0 percent, report active use of both major platforms. Among riders, the corresponding share is 16 of 156, or 10.3 percent. Conditional on single-homing, users tilt toward *foodpanda*: 141 of 247 single-homing users, or 57.1 percent, report *foodpanda*, while 42.9 percent report GrabFood. The rider side is much closer to parity, with GrabFood accounting for 52.1 percent of single-homing riders and *foodpanda* 47.9 percent. In economic terms, users appear to rely on multihoming as an active participation margin, whereas riders more often sort into one platform or the other. This difference is central to the empirical design because it implies that the determinants of diversification are likely to differ from the determinants of single-platform affiliation. Additonally, those determinants may differ again across sides.

The regional variation in Table 1 also helps identify the objects the data can speak to. User multihoming appears in every survey area, with especially large counts outside Metro Manila, while rider multihoming remains sparse across all areas.

[3] Annex 3 provides details on survey implementation, sampling strategy, and geographic coverage.

That pattern provides the user-side analysis with sufficient dispersion to study both the multihoming margin and the conditional platform-choice margin in a relatively balanced way. On the rider side, by contrast, the thin multihoming cell requires a parsimonious specification and shifts more of the rider-side cross-platform variation to the conditional affiliation margin.

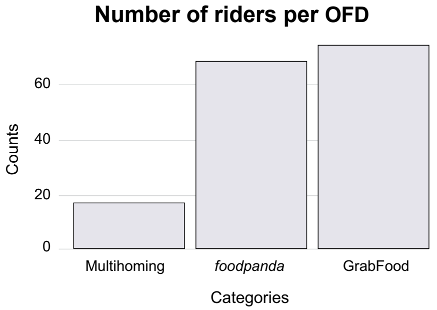
TABLE 1. Sample composition, regional distribution, and response accounting

	foodpanda	GrabFood	Multihoming	Total
Panel A: Users				
NCR (Metro Manila)	18	30	16	64
Luzon (other)	29	15	34	78
North Central Luzon	29	13	26	68
South Luzon / Bicol	30	25	27	82
Visayas	35	23	36	94
Total	141	106	139	386
Panel B: Riders				
NCR (Metro Manila)	22	44	7	73
Luzon (other)	7	7	2	16
North Central Luzon	13	8	0	21
South Luzon / Bicol	10	8	3	21
Visayas	15	6	4	25
Total	67	73	16	156
Panel C: Response and sample size				
Group	**Completed interviews**	**Response rate (eligible)**	**Non-response rate (eligible)**	**Relevant sample**
Users	500	45.21%	54.79%	386 (excluded: 114; 22.8%)
Riders	200	60.42%	39.58%	156 (excluded: 44; 22.0%)

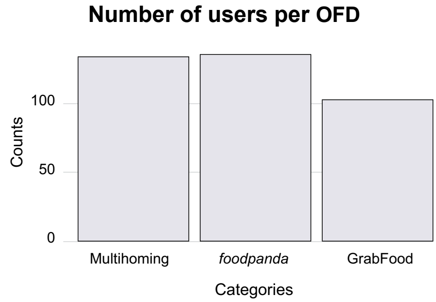
Note: Panels A and B report sample counts by area and platform status. ‘Multihoming’ indicates respondents who are active on more than one online delivery platform. Panel C reports response and non-response rates among eligible participants as well as the completed-interview and relevant sample size.

Figure 2 gives a visual summary of the same composition. The user side combines a sizable multihoming group with substantial single-homing on both major platforms, while the rider side is much more concentrated on single-homing. The figure reinforces the paper’s core asymmetry: users appear to keep both platforms available more often, whereas riders appear to face a sharper decision about affiliation. That is why the empirical analysis does not impose a common reduced-form structure between the two sides.

FIGURE 2. Platform-status composition of surveyed riders and users



(a) Riders



(b) Users

The unit of observation is the individual survey respondent. We analyze the user and rider sample separately because the relevant economic margins differ between the two sides of the market. For both samples, the active variables are organized into four economically motivated groups. First, price or expenditure variables capture monetary incentives: perceived delivery fees and expenditure per order for users, and tips and monthly operating costs for riders. Second, network variables proxy for local indirect network effects through area-level counts of riders, users, and restaurants. Third, platform strategic variables capture mechanisms that may facilitate or impede diversification, such as in-house delivery availability, stated loyalty, uniforms or equipment provision, and pay arrangements. Fourth, a compact set of controls captures demographics and intensity of use or work, including recent ordering, age, gender, and weekly working days. This organization drives the descriptive analysis and the regression design around economically interpretable mechanisms rather than around the full set of available survey responses.

For the broader user-side descriptive table, two variables retain missing values after the sample restrictions: the indicator for continuing to order after a 10 percent price increase is missing for 33 of 386 users, or 8.5 percent, and household income is missing for 12 users, or 3.1 percent. To preserve the full analytic sample in the broader descriptive exhibit, we impute the missing values. Continuous variables are imputed at the median and binary variables at the mode, first within area and multihoming status when at least five observed values are available, otherwise within area, and otherwise in the full user sample. Under this rule, household income is imputed using area-by-status medians, and the 10 percent continuation indicator is imputed using area-by-status modes. We do not impute platform-status outcomes, variables that define multihoming, or structurally branch-specific follow-up variables. The rider-side broader descriptive table does not require a corresponding imputation step, as the added composition variables are fully observed once the area-level merges are completed.

TABLE 2. User-side descriptive evidence for maintained logit variables

Panel A. Summary statistics (all users)

Variable	Mean	SD	Min	Max
Price and expenditure				
Delivery fee per order (₱100 units)	0.583	0.28	0.1	1.1
Expenditure per order (₱100 units)	3.633	2.406	0.208	9.000
Network size				
Share of restaurants	0.116	0.114	0.016	0.5
Share of riders	0.146	0.105	0.055	0.5
Platform strategies				
Considers other platforms	0.803	0.398	0	1
Loyal to preferred platform	0.060	0.237	0	1
Controls				
Age (10 years)	3.178	1.048	1.8	7.1
Female	0.484	0.5	0	1
Household income (₱100,000 units)	2.495	2.264	1.250	14
In-house delivery available	0.124	0.330	0	1
No dine-in substitute	0.155	0.363	0	1
Observations	386			

Panel B. Mean differences

Variable	Multi-homing	Single-homing	Difference	SE
Network size				
Share of restaurants	0.145	0.099	0.045***	(0.013)
Share of riders	0.184	0.124	0.059***	(0.011)
Platform strategies				
Considers other platforms	0.914	0.741	0.173***	(0.037)
Loyal to preferred platform	0.022	0.081	-0.059***	(0.021)
Controls				
Age (10 years)	3.194	3.169	0.025	(0.11)
Female	0.518	0.466	0.052	(0.053)
Household income (₱100,000 units)	2.675	2.392	0.283	(0.250)
In-house delivery available	0.129	0.121	0.008	(0.035)
No dine-in substitute	0.194	0.134	0.061	(0.040)
Observations	139	247		

TABLE 2. User-side descriptive evidence... (continued)

Panel C. Mean differences among single-homers

Variable	GrabFood	*foodpanda*	Difference	SE
Price and expenditure				
Delivery fee per order (₱100 units)	0.649	0.551	0.098**	(0.038)
Expenditure per order (₱100 units)	3.506	3.375	0.131	(0.299)
Network size				
Share of restaurants	0.082	0.112	-0.030***	(0.011)
Share of riders	0.147	0.108	0.039***	(0.013)
Platform strategies				
Loyal to preferred platform	0.047	0.106	-0.059*	(0.033)
Controls				
Age (10 years)	3.172	3.167	0.004	(0.135)
Female	0.434	0.489	-0.055	(0.064)
Household income (₱100,000 units)	2.308	2.457	-0.149	(0.283)
Observations	106	141		

Note: The unit of observation is a surveyed OFD user. The table is limited to variables that enter at least one maintained user-side logit specification. Panel A reports means, standard deviations, minima, and maxima using all non-missing observations for each variable, so usable counts can differ across rows because some survey items are branch-specific or unavailable for a subset of respondents. Panel B compares user multihomers with user single-homers; reported differences equal the multihomer mean minus the single-homer mean, and standard errors come from Welch two-sample comparisons when both groups have sufficient support. Panel C restricts the sample to single-homers and compares GrabFood with *foodpanda*; reported differences equal the GrabFood mean minus the *foodpanda* mean, with Welch standard errors reported in parentheses. Monetary variables are expressed in hundreds of Philippine pesos where noted. The normalized rider- and restaurant-count variables divide each raw area count by twice the largest observed area-level count for that side. Stars denote *** p<0.01, ** p<0.05, and * p<0.10.

4.2. Relevant variables across decision margins

Table 2 and Table 3 convert the raw survey information into stylized facts about the paper’s two decision margins. Panel A describes the relevant sample. Panel B in each table compares multihomers with single-homers and thus addresses diversification across platforms. Panel C conditions on single-homing and compares GrabFood with *foodpanda*, so it speaks to platform affiliation within specialization. The variables in Panel B describe the value and feasibility of keeping both platforms active, whereas the variables in Panel C describe relative platform attractiveness once a respondent has chosen to specialize.

We calculate network size as follows. Suppose we focus on the indirect network size generated by restaurants for users (or riders). For each area, we count the number of restaurants on each platform: P_1 for platform 1, P_2 for platform 2, and P_{12} for restaurants that multihome on both platforms. The total number of restaurants in an area is the sum of these three groups. We then construct a measure of network size by dividing the observed number of restaurants by the maximum possible network size (maximum capacity level), defined as twice the largest number of restaurants observed in any area. For example, in area A_1 there are five restaurants on platform 1, three on platform 2, and two multihoming restaurants, giving 10 restaurant listings in total. If the maximum number of restaurants observed in any area is 15, then the implied network shares are calculated relative to a maximum capacity of 30. The same construction applies to the number of riders and the number of users for riders.

TABLE 3. Rider-side descriptive evidence for maintained logit variables

Panel A. Summary statistics (all riders)

Variable	Mean	SD	Min	Max
Price and expenditure				
Average tip per trip (₱1000 units)	0.068	0.088	0.005	0.6
Monthly operating cost (₱1000 units)	4.935	2.949	0.15	16
Network size				
Share of restaurants	0.160	0.141	0.016	0.5
Share of users	0.280	0.073	0.181	0.5
Platform strategies				
No. of required documents at application	3.692	1.189	1	7
Depends on price per order	0.301	0.460	0	1
Uniform and equipment provided	0.250	0.434	0	1
Controls				
Age (10 years)	3.365	0.785	2.1	5.4
Fewer rides on other apps	0.365	0.483	0	1
Working days per week	5.641	1.183	2.5	6.5
Observations	156			

Panel B. Mean differences

Variable	Multi-homing	Single-homing	Difference	SE
Price and expenditure				
Monthly operating cost (₱1000 units)	4.754	4.956	-0.202	(0.688)
Network size				
Share of restaurants	0.288	0.145	0.143**	(0.05)
Share of users	0.408	0.266	0.142***	(0.018)
Platform strategies				
Uniform and equipment provided	0.250	0.250	0	(0.118)

TABLE 3. Rider-side descriptive evidence... (continued)

Panel B. Mean differences

Variable	Multi-homing	Single-homing	Difference	SE
Controls				
Age (10 years)	3.225	3.381	-0.156	(0.194)
Fewer rides on other apps	0.062	0.4	-0.338***	(0.075)
Working days per week	5.5	5.657	-0.157	(0.277)
Observations	16	140		

Panel C. Mean differences among single-homers

Variable	GrabFood	*foodpanda*	Difference	SE
Price and expenditure				
Average tip per trip (₱1000 units)	0.057	0.083	-0.025	(0.016)
Network size				
Share of restaurants	0.112	0.182	-0.070***	(0.021)
Share of users	0.251	0.281	-0.030***	(0.010)
Platform strategies				
No. of required documents at application	3.781	3.552	0.229	(0.199)
Depends on price per order	0.233	0.403	-0.170**	(0.078)
Controls				
Age (10 years)	3.477	3.276	0.201	(0.134)
Working days per week	5.815	5.485	0.330	(0.204)
Observations	73	67		

Note: The unit of observation is a surveyed delivery rider. The table is limited to variables that enter at least one maintained rider-side logit specification. Panel A reports means, standard deviations, minima, and maxima using all non-missing observations for each variable, so usable counts can differ across rows because survey branching and sparse support limit some items. Panel B compares rider multihomers with rider single-homers; reported differences equal the multihomer mean minus the single-homer mean, and standard errors come from Welch two-sample comparisons when both groups have sufficient support. Panel C restricts the sample to single-homers and compares GrabFood with *foodpanda*; reported differences equal the GrabFood mean minus the *foodpanda* mean, with Welch standard errors reported in parentheses. Monetary variables are expressed in thousands of Philippine pesos where noted. The normalized user- and restaurant-count variables divide each raw area count by twice the largest observed area-level count for that side. Stars denote *** $p<0.01$, ** $p<0.05$, and * $p<0.10$.

The decision to multihome is driven by the benefit of adding an extra platform versus the cost of doing so, while platform choice among single-homers is driven by the relative attractiveness of each platform. That is, market size, compatibility, and multihoming costs matter for the homing decision, whereas platform-specific features matter for the choice among platforms. Some variables like network size may affect both choices as they vary both by platform and by multihome within each area (market).

Variables assigned to the multihoming margin capture whether adding a second platform is worthwhile. We group these variables into four broad categories. First, price and expenditure variables proxy for the economic gains from comparing across platforms. Higher expenditure per order, monthly delivery spending, and delivery fees may increase the value of maintaining access to multiple platforms because users can compare prices, promotions, and service terms across platforms. Second, platform strategic variables capture the cost of diversifying platforms for respondents. Considering other platforms, loyalty to a preferred platform induced by platform strategies and value or attachment measures proxy for openness to switching versus attachment to a single platform. For riders, work intensity captures the degree to which delivery work is organized around a regular platform routine. Third, network size variables measure whether a second platform provides meaningful additional access to counterparties. Area-level rider counts, restaurant counts, platform participation, and the number of locally available platforms proxy for the extent to which another platform expands the respondent's effective choice set. Fourth, barriers and frictions capture factors that may reduce the need or ability to multihome. In-house delivery, offline substitution, and the absence of dine-in substitutes proxy for settings in which users are more constrained to one ordering channel or face higher coordination costs.

Variables assigned to the conditional platform-choice margin proxy for factors that affect the relative attractiveness of one platform against another once a respondent has chosen to single-home. Unlike the multihoming decision, which depends on whether maintaining an additional platform is worthwhile, this margin depends on cross-platform differences in the expected utility from affiliation.

Platform-specific price and service variables such as delivery fees, delivery time, reliability, service quality, and promotional intensity capture the direct consumption or operating value of one platform relative to its rival. Better terms on these dimensions should increase the likelihood that a respondent selects that platform when single-homing.

Coverage and local network variables proxy for platform-specific demand- and supply-side network advantages. A platform with greater local rider availability, restaurant density, or market coverage may offer shorter wait times, broader variety, or more reliable matching, which can make that platform more attractive even when the respondent does not multihome. These variables enter the conditional platform-choice equation rather than the multihoming equation because they primarily govern which platform is preferred conditional on specialization, not whether the respondent finds it worthwhile to maintain access to multiple platforms.

Control variables such as age and gender may enter both regressions. The tables, therefore, do more than summarize the sample: they indicate which margins the data can discipline and why the same covariates need not matter in the same way across users and riders.

4.3. Descriptive statistics

Tables 2 and 3 summarize the variables used in the maintained logit specifications and organize the raw comparisons around the two empirical margins. The first margin compares multihomers with single-homers. The second margin compares GrabFood and *foodpanda* among respondents who single-home. Annex 3.1 and 3.2 report the corresponding user- and rider-side variable dictionaries and summary statistics for the broader cleaned survey measures.

The raw comparisons point first to network size. Users who multihome are by definition exposed to larger rider and restaurant networks than users who single-home. The difference is 0.059 in (normalized) rider network size and 0.045 in (normalized) restaurant network size. Riders show the same pattern. Multihoming riders operate in areas with (normalized) user and restaurant network sizes that are 0.142 and 0.143 higher than those of rider single-homers. These gaps are natural in a platform market. A second platform is more valuable when it gives access to a larger local pool of counterparties. For users, this means more riders and restaurants. For riders, this means more potential orders and more restaurants from which orders can originate.

On the user side, Table 2 also shows that multihoming is associated with weaker attachment to a single platform. User multihomers are 17.3 percentage points more likely than single-homers to report considering other alternatives beyond multihoming. They are 5.9 percentage points less likely to report loyalty to a preferred platform. These differences fit the interpretation that multihoming is easier when users face lower attachment switching costs. By contrast, in-house delivery availability, household income, age, and gender show insignificant differences across user multihomers and single-homers. The no-dine-in-substitute measure is somewhat larger, at 6.1 percentage points, but it is also not statistically significant. The main user-side separation is therefore not demographic. It is linked to local network access and to the willingness to keep alternatives open.

Among user single-homers, the relevant comparison changes. The question is no longer whether a user keeps both apps active, but which platform the user relies on. Table 2 shows that GrabFood single-homers report delivery fees that are 0.098 hundred pesos higher than *foodpanda* single-homers, or about 9.8 pesos per order. They also live in areas with higher normalized rider network size and lower normalized restaurant network size. Loyalty to a preferred platform is lower among GrabFood single-homing users by 5.9 percentage points. Other differences, including expenditure per order, income, age, and gender, are modest. These raw patterns suggest that the single-platform choice margin is more closely related to platform-specific service and local network conditions than to the same factors that separate multihomers from single-homers.

The rider-side evidence in Table 3 has the same two-margin structure, but the economic content is different. Rider multihomers and single-homers have similar operating costs and working days. The largest non-network difference is about outside demand. Only 6.2 percent of rider multihomers report that other applications provide too few rides, compared with 40 percent of rider single-homers. The gap is 33.8 percentage points. This comparison is consistent with a simple participation logic: riders are more likely to work across platforms when they believe there is enough demand outside their main app to justify doing so. It shows that the multihoming margin is closely tied to perceived ride availability rather than to observed cost differences.

For rider single-homers, platform affiliation is again linked to platform-specific work arrangements. Table 3 shows that GrabFood single-homers are 17.0 percentage points less likely than *foodpanda* single-homers to report being paid by price per order. They also operate in areas with lower normalized user and restaurant network size. Average tips, working days, application document counts, and age differ less sharply in the raw comparisons. Thus, for riders as for users, the descriptive evidence separates the decision to use more than one platform from the decision to specialize in one platform. The former mainly concerns whether the local environment can support cross-app activity. The latter is more closely related to the terms and conditions attached to a particular platform.

5. Empirical findings

This section estimates the two empirical margins previously introduced. The first margin is whether a respondent multihomes. The second margin is, conditional on single-homing, whether the respondent chooses GrabFood rather than *foodpanda*.

Table 4 reports the user-side estimates, and Table 5 documents the rider-side estimates. All entries are average marginal effects from binary logit models, so they are interpreted as percentage-point changes in predicted probabilities rather than as odds ratios. For example, an estimate of 0.10 means a 10 percentage-point difference in the probability of the outcome. For continuous variables, this difference corresponds to a one-unit increase in the units reported in the table. For binary variables, it corresponds to a change from zero to one. The estimates are descriptive conditional associations and should not be read as causal effects.

A number of the right-hand-side variables are endogenous, including the price variables, network effects, and platform strategies, among others. This large set of endogenous regressors makes it difficult, if not impossible, to determine the direction of the bias arising from correlations both among the endogenous variables themselves and between the endogenous and exogenous variables. Some endogenous variables, such as network size and loyalty measures, are likely to be positively correlated with the error term, whereas others, such as prices, are likely to be negatively correlated. In Annex 4, we discuss from an econometric perspective how the bias induced by multiple endogenous variables may be signed. Although the problem can be partly decomposed using the Frisch–Waugh–Lovell theorem, the overall direction of the bias remains difficult to establish. In our context, however, if the positive correlations dominate the negative ones, the estimates are likely to be upward biased, as explained in Annex 4. In the discussion of marginal effects below, we therefore caution the reader that these effects may be overstated, although this should be understood only as an intuition, since the true direction of the bias is complex and cannot be determined with certainty.

5.1. User-side results

Table 4 reports average marginal effects from the user-side logit models. Column 1 estimates the probability that a user multihomes. Column 2 uses only single-homing users and estimates the probability that a user chooses GrabFood rather than *foodpanda*.

The user-side estimates separate a diversification margin from a platform-affiliation margin. In the first margin, multihoming is concentrated among users with stronger delivery demand and a sizeable number of riders in the area. Monthly delivery spending is a useful benchmark: a ₱100 is associated with a 1.3 percentage-point higher probability of multihoming. That magnitude is modest in level terms, but it is meaningful because it moves with behavior that reflects sustained platform use. Users who say they are willing to consider other platforms are 20.4 percentage points more likely to multihome, and users without a dine-in substitute are 11.0 percentage points more likely to multihome. In platform-competition terms, multihoming looks like a margin of engagement: it becomes attractive when delivery demand is frequent enough to justify gaining from two apps and when the user's outside option set is thin enough that the second connection has value.

Network size matters as well, although not symmetrically across all network measures. The rider-network variable is positive and statistically significant, which is consistent with users being more willing to maintain both platforms when the local delivery network is sufficiently dense with a second platform. The restaurant-network measure is not significant in the multihoming equation, so the relevant pattern is not that every counterpart count matters equally. The affiliation margin among single-homers is different. Here, the question is not whether a user keeps additional online service apps, but which platform becomes the default. Reported delivery fees are strongly associated with choosing GrabFood: a ₱100 increase in the reported fee in both platforms is associated with a 28.3 percentage-point higher probability of choosing GrabFood. Because these fees may reflect basket size, location, service mix, and selection into platform use, the estimate should be read as a sorting gradient rather than a pure price effect. As suggested above, those percentages may be overstated due to endogeneity bias. Even so, the magnitude is large enough to matter, and it indicates that the two platforms segment users along a monetary service dimension. The network variables point in opposite directions: users in areas with larger rider networks are more likely to choose GrabFood, while users in areas with larger restaurant networks are less likely to do so. Loyalty remains a strong sorting device, with loyal users 22.1 percentage points less likely to choose GrabFood, and more frequent orders are also less likely to do so.

TABLE 4. User-side logit models

	Multihoming	GrabFood among single-homers
Price and expenditure		
Delivery fee per order (₱100 units)		0.283***
		(0.095)
Expenditure per order (₱100 units)		-0.010
		(0.012)
Monthly delivery spending (₱100 units)	0.013***	
	(0.003)	
Network size		
Share of restaurant	-0.075	-3.145***
	(0.286)	(0.869)
Share of riders	1.185***	2.498***
	(0.286)	(0.442)
Platform strategies		
Continue after 10% price increase	-0.049	-0.099
	(0.060)	(0.085)
Loyal to preferred platform	-0.030	-0.221**
	(0.130)	(0.088)
Controls		
Age (10 years)	0.001	-0.011
	(0.021)	(0.027)
Considers other platforms	0.204***	
	(0.060)	
Female	0.037	-0.084
	(0.045)	(0.057)
Household income (₱100,000 units)	0.003	0.010
	(0.010)	(0.014)
In-house delivery available	0.026	
	(0.066)	
No dine-in substitute	0.110*	
	(0.063)	
Orders per month	0.012	-0.044**
	(0.007)	(0.019)
Observations	386	247
Pseudo-R^2	0.149	0.185

Note: Each column reports average marginal effects from a binary logit model estimated on the imputed user-ready analysis file. Column 1 models the probability of multihoming using the active user-side variables plus the active common controls. Column 2 restricts the sample to single-homers and models the probability of choosing GrabFood over *foodpanda* using the active Panel C variables plus the active common controls. Variables commented out of the specification are automatically excluded from the model table and average marginal effects output. The analysis is descriptive rather than causal.

5.2. Rider-side results

Table 5 reports average marginal effects from the rider-side logit models. The rider multihoming equation uses ridge penalization because only 16 riders multihome in the maintained sample. For this reason, the rider multihoming estimates should be read with even greater caution.

TABLE 5. Rider-side logit models

	Multihoming	GrabFood among single-homers
Price and expenditure		
Average tip per trip (₱1000 units)		-0.421 (0.369)
Monthly operating cost (₱1000 units)	-0.003 (0.009)	
Network size		
Share of restaurants	0.138 (0.086)	-3.726*** (0.293)
Share of users	0.169* (0.098)	-10.031*** (1.108)
Platform strategies		
No. of documents application		0.046* (0.027)
Depends on price per order		-0.127* (0.077)
Uniform and equipment provided	0.000 (0.052)	
Controls		
Age (10 years)	-0.025 (0.031)	0.078* (0.040)
Fewer rides on other apps	-0.095** (0.042)	
Working days per week	-0.001 (0.022)	-0.033 (0.030)
Observations	156	140
Pseudo-R^2	0.209	0.516

Note: Each column reports average marginal effects from a binary logit model. Column 1 models the probability of multihoming and uses a ridge-penalized logit because the rider multihoming margin has few positive observations. Column 2 restricts the sample to single-homing riders and models the probability of choosing GrabFood over *foodpanda* using the active Panel C variables plus the active common controls. Variables commented out of the specification are automatically excluded from the model table and average marginal effects output. The analysis is descriptive rather than causal.

The rider-side estimates reinforce the idea that multihoming is a scarce margin that becomes viable only when the outside demand pool of users is thick enough. The clearest correlate is the belief that other apps provide too few rides: riders who report that constraint are 9.5 percentage points less likely to multihome. That is the natural sign that a second platform only pays off when expected incremental orders can cover the fixed time and administrative costs of remaining active on multiple apps. The weakly positive user-network gradient is consistent with the same logic. By contrast, operating costs, uniforms or equipment provision, working days, and age do not affect this margin. Rider multihoming is therefore not driven by broad worker demographics; it is tied to whether the local market can supply enough ride opportunities outside the main platform to make diversification worthwhile.

Among single-homing riders, platform affiliation is shaped more by the terms of work than by generic market scale. Riders paid by price per order are 12.7 percentage points less likely to choose GrabFood, while each additional required application document is associated with a 4.6 percentage-point higher probability of choosing GrabFood. Age also matters: a ten-year increase is associated with a 7.8 percentage-point higher probability of choosing GrabFood. These are significant gradients in a market where platform contracts differ in compensation rules and compliance burdens. The network variables are informative: riders in denser user and restaurant markets are less likely to choose GrabFood, which suggests that affiliation is not governed only by market size. A more plausible reading is that the platforms sort riders into different segments of local demand and different work arrangements, with platform choice reflecting how each app packages pay and access to orders.

That pattern fits the broader platform-competition framework used in the paper. Multihoming responds to whether the local market offers enough incremental business to justify keeping a second app live, whereas single-homing reflects how a platform bundles demand, compensation, and administrative requirements. The two decisions are therefore related but distinct: one concerns diversification across competing platforms, the other concerns specialization on the platform that best matches the rider's expected earnings and operating conditions.

6. Conclusions

This paper examines multihoming in the Philippine OFD market from the perspectives of users and delivery riders. Using two original cross-sectional surveys, we document how multihoming and single-platform specialization vary with price or cost measures, network size, switching-friction variables, and individual characteristics. The empirical design separates the decision to multihome from the platform-choice decision among single-homers, which allows the analysis to distinguish diversification across platforms from specialization on one platform.

The descriptive patterns show that multihoming is systematically associated with local market size. On the rider side, multihoming is more common in areas with more users and is less common among riders who report that other applications provide too few rides. Conditional on single-homing, GrabFood affiliation is associated with thinner local networks and with lower reported incidence of platform-provided uniforms or pay-by-price-order arrangements. These conditional platform-choice estimates should be read as sorting patterns, not as causal effects of contract design.

For users, multihoming is positively associated with monthly delivery spending, local rider density, stated willingness to consider other platforms, and the absence of a dine-in substitute. Conditional on single-homing, GrabFood use is more common in areas with more riders and fewer restaurants and among users reporting higher perceived delivery fees. The contrast between the multihoming and conditional platform-choice equations indicates that the correlates of platform expansion are not the same as the correlates of platform specialization.

The findings of this study offer insights for Philippine competition policy, particularly in understanding multihoming behavior in the OFD market, a key sector in the country's rapidly expanding digital economy. By examining how users and drivers navigate choices between competing platforms, the study enhances the capacity of antitrust practitioners and policymakers to grasp key factors for platform competition. The results underscore that platform choice and multihoming are shaped not only by costs and fees but also by working conditions, highlighting the need to consider both consumer and worker welfare in the regulation of digital markets.

Methodologically, the paper shows the value of a parsimonious two-margin empirical design for settings in which multihoming is observed but causal identification is limited. This structure is especially useful on the rider side, where only 16 surveyed riders multihome and a highly parameterized platform-choice model would be unstable. The results are therefore best understood as descriptive evidence on significant correlates of multihoming and conditional platform choice.

From a policy perspective, our study underscores the nuanced challenges regulators face in multisided digital markets. Multihoming, by limiting platform lock-in and fostering contestability, can sustain competitive discipline, yet platforms can and do deploy targeted strategies to attenuate these effects. Exclusive partnerships, loyalty-inducing compensation schemes, technological lock-ins, and the calibration of fees and user experience can collectively shape competition.

Although the evidence comes from the Philippine food delivery sector, the empirical distinction between multihoming and conditional platform choice is relevant for other digital marketplaces in which agents decide both whether to maintain access to multiple platforms and which platform to rely on when they single-home. At the same time, the cross-sectional design and the endogeneity of prices, network size, and switching-friction variables limit the strength of causal and welfare claims.

In summary, this study documents systematic correlates of multihoming on both sides of a multisided food delivery market. The results are informative for competition authorities because they identify observable conditions under which multihoming is more or less prevalent, while also showing why cross-sectional survey evidence should be interpreted cautiously. Future research with panel data, experimentally induced variation, or stronger instruments would be needed to estimate the causal effects of fees, network composition, and switching-cost policies on platform participation.

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Annexes

Annex 1. Nested-logit feasibility and robustness

This appendix reports nested-logit estimates as a robustness check on the maintained two-step binary specification. The platform-affiliation outcome has three mutually exclusive categories: *foodpanda* single-homing, GrabFood single-homing, and multihoming. The natural nesting structure places *foodpanda* and GrabFood in a single-homing nest and treats multihoming as a separate branch. This structure is intuitive because it separates the decision to single-home from the platform chosen conditional on single-homing. Its limitation is that the multihoming branch is a singleton nest, so the model can identify only the inclusive-value parameter for the single-homing nest.

Annex 1.1 reports the user-side nested-logit estimates. The model uses the 386-user analytic sample. The estimated inclusive-value parameter is close to one, and the nested-logit likelihood is essentially identical to the multinomial-logit benchmark. This indicates that the nested logit adds little beyond the standard multinomial specification. The main coefficient patterns are nevertheless consistent with the maintained results: rider-network density is positively associated with both GrabFood and multihoming relative to *foodpanda*, while restaurant-network density is negatively associated with these margins. Users who report considering other platforms are also more likely to multihome.

ANNEX 1.1. User-side nested-logit robustness model

	GrabFood vs *foodpanda*	Multihoming vs *foodpanda*
Intercept	-0.364 (0.982)	-2.687*** (0.824)
Monthly delivery spending (₱100 units)	0.034 (0.108)	0.093 (0.060)
Delivery fee per order (₱100 units)	1.685*** (0.541)	-0.041 (0.539)
Expenditure per order (₱1000 units)	-0.152 (0.281)	-0.109 (0.160)
Normalized area rider network size	26.053*** (4.141)	21.200*** (3.791)
Normalized area restaurant network size	-24.880*** (4.399)	-9.473*** (2.414)
Considers other platforms	-0.381 (0.413)	0.853* (0.471)
In-house delivery available	0.063 (0.448)	0.217 (0.409)
Loyal to preferred platform	-1.799** (0.719)	-0.963 (0.813)
No dine-in substitute	-0.316 (0.438)	0.384 (0.382)
Continue after 10 percent price increase	-0.368 (0.432)	-0.444 (0.386)
Orders per month	-0.271 (0.235)	-0.045 (0.089)
Household income (₱100,000 units)	0.074 (0.076)	0.040 (0.061)
Age (10 years)	-0.005 (0.144)	0.009 (0.134)
Female	-0.402 (0.303)	0.040 (0.285)
Inclusive-value parameter	0.999*** (0.000)	
Observations	386	
Log-likelihood	-331.911	
AIC	725.823	
BIC	848.454	
MNL log-likelihood	-331.911	

Note: The table reports a user-side nested logit with '*foodpanda*' and 'GrabFood' inside a single-homing nest and 'Multihoming' as a singleton alternative. *foodpanda* single-homing is the base alternative. Because the multihoming branch is a singleton, the only estimable inclusive-value parameter is for the single-homing nest. The sample uses the maintained imputed user-side covariates from the expanded analysis file and complete-case estimation. Estimation-sample shares are *foodpanda*: 141 (36.5 percent); GrabFood: 106 (27.5 percent); Multihoming: 139 (36.0 percent). The multinomial-logit benchmark on the same sample has log-likelihood -331.911. Warning summary: estimated nesting parameter is very close to 1, so the nested logit is close to a multinomial logit. Stars denote *** $p<0.01$, ** $p<0.05$, and * $p<0.10$.

ANNEX 1.2. Rider-side nested-logit robustness model

	GrabFood vs *foodpanda*	Multihoming vs *foodpanda*
Intercept	48.908*** (11.149)	-115.352 (82.188)
Monthly operating cost (₱1000 units)	0.202 (0.125)	-0.844 (5.603)
Tip per trip (₱1000 units)	-7.075 (4.420)	43.824 (134.015)
Normalized area user network size	-153.249*** (34.009)	272.404*** (46.096)
Normalized area restaurant network size	-57.621*** (11.636)	88.163* (53.049)
Uniform and equipment provided	-3.802*** (0.996)	6.733 (45.081)
Fewer rides on other apps	-0.531 (0.668)	-2.603 (28.368)
Paid by price per order	-2.402** (1.070)	2.608 (36.301)
Application document count	0.390 (0.345)	-0.682 (21.252)
Working days per week	-0.766* (0.399)	-0.702 (13.547)
Age (10 years)	1.146** (0.509)	0.005 (19.056)
Female	-0.039 (1.414)	-11.499*** (0)
Inclusive-value parameter	0.999 0.000	
Observations	156	
Log-likelihood	-34.362	
AIC	118.725	
BIC	194.971	
MNL log-likelihood	-34.442	

Note: The table reports a rider-side nested logit with '*foodpanda*' and 'GrabFood' inside a single-homing nest and 'Multihoming' as a singleton alternative. *foodpanda* single-homing is the base alternative. Because the multihoming branch is a singleton, the only estimable inclusive-value parameter is for the single-homing nest. The sample uses the maintained rider-side covariates and complete-case estimation. Estimation-sample shares are *foodpanda*: 67 (42.9 percent); GrabFood: 73 (46.8 percent); Multihoming: 16 (10.3 percent). The multinomial-logit benchmark on the same sample has log-likelihood -34.442. Warning summary: estimated nesting parameter is very close to 1, so the nested logit is close to a multinomial logit. Stars denote *** p<0.01, ** p<0.05, and * p<0.10.

Annex 1.2 reports the corresponding rider-side estimates. These results should be read more cautiously because the rider sample contains only 16 multihomers. The inclusive-value parameter is again close to one, and the fit is nearly identical to the multinomial-logit benchmark. The nested-logit estimates, therefore, do not provide a separate model of substitution patterns. They mainly show that estimating the three observed affiliation outcomes jointly does not overturn the descriptive interpretation of the main results.

Annex 2. Survey design

Survey method

The survey was implemented by a professional field research firm through face-to-face interviews using a standardized questionnaire and visual aids. Tablet-Assisted Personal Interviewing (TAPI) was employed to ensure consistency in data capture. The response rate among eligible interviewees was 45.2 percent for users and 60.4 percent for riders. Average interview duration was 22 minutes for users and 19 minutes for riders, including screening questions.

Survey area

The user survey covered five major regions of the Philippines with an initial total of 500 completed interviews. The user analytic sample used in the main regressions is 386 after applying the maintained exclusions (respondents outside the relevant OFD choice set, respondents associated only with niche or rarely observed platforms, and observations missing key variables). Annex 2.1 shows the geographic distribution of user respondents.

ANNEX 2.1. Survey areas and sample sizes for online delivery users

Areas	Sample
NCR	**100**
North/Central Luzon	**100**
Pangasinan	30
Bulacan	30
Pampanga	40
South Luzon/Bicol	**100**
Laguna	60
Batangas	20
Camarines Sur	20
Visayas	**100**
Negros Occidental	40
Cebu	60
Mindanao	**100**
Misamis Oriental	40
Davao del Sur	60
TOTAL	**500**

For riders, a purposive sampling strategy was adopted to capture active delivery workers in key urban centers. A total of 200 rider interviews were completed, with half of the sample based in NCR. After the same maintained exclusions, the rider analytic sample is 156. Annex 2.2 reports the geographic distribution of rider respondents.

ANNEX 2.2. Survey areas and sample sizes for online delivery riders

Areas	Sample
NCR	**100**
North/Central Luzon	**25**
South Luzon/Bicol	**25**
Visayas	**25**
Mindanao	**25**
TOTAL	**200**

Annex 3. Sampling design

For online delivery users, a multi-stage area probability sampling procedure was implemented to ensure representativeness across regions. For riders, purposive sampling was employed given the absence of a complete sampling frame. Recruiters relied on internal referral networks to identify potential respondents, who were subsequently screened to verify eligibility. This strategy ensured adequate coverage of *foodpanda* and GrabFood riders while capturing heterogeneity in demographics, regional location, and platform arrangements.

Users: supplementary tables and variable definitions

This subsection reports the user-side variable dictionary and summary statistics for the cleaned analytic sample. As with the rider table, it documents the broader set of survey measures available after cleaning, while the maintained empirical specifications use only the compact set of variables motivated by prices, local network conditions, switching frictions, and basic individual characteristics.

Riders: supplementary tables and variable definitions

This subsection reports the rider-side variable dictionary and summary statistics for the cleaned analytic sample. The table is included for transparency about available survey measures. It should not be read as the covariate list for the maintained regressions, which use the more compact economics-first specification described in the main text.

ANNEX 3.1. User variable dictionary and summary statistics

Abbreviation	Detailed Description	N	Mean	SD	Min	Max
Channel & Premium						
Preferred: Express	Preferred platform is an express delivery service	386	0.008	0.088	0	1
Premium Member	Premium member on the preferred platform	386	0.008	0.088	0	1
Use: Website	Usual ordering method is via website	386	0.008	0.088	0	1
Demographics & Household						
Age	Age of respondent	386	31.782	10.484	18	71
Female	Female respondent (indicator)	386	0.484	0.500	0	1
Dine-In Deterrents						
No Dine-In: Travel Time	Does not dine in due to travel time	386	0.080	0.272	0	1
Reason: Avoid Crowds	Avoids dine-in to avoid crowds	386	0.047	0.211	0	1
Reason: Dine-In Hours	Avoids dine-in due to limited hours	386	0.044	0.205	0	1
Reason: Full Restaurants	Avoids dine-in because restaurants are full	386	0.003	0.051	0	1
Reason: Hard to Decide	Finds it difficult to choose what to order	386	0.003	0.051	0	1
Reason: Long Queues	Avoids dine-in due to long queues	386	0.003	0.051	0	1
Reason: Slow Service	Avoids dine-in due to slow service	386	0.008	0.088	0	1
Reason: Too Lazy	Avoids dine-in due to convenience/laziness	386	0.010	0.101	0	1
Geography						
Area: NCR	Resides in Metro Manila (NCR)	386	0.166	0.372	0	1
Area: Luzon	Resides in Luzon (aggregate)	386	0.202	0.402	0	1
Area: N. Central Luzon	Resides in North Central Luzon	386	0.176	0.381	0	1
Area: S. Luzon/Bicol	Resides in South Luzon or Bicol	386	0.212	0.410	0	1
Area: Visayas	Resides in Visayas	386	0.244	0.430	0	1

ANNEX 3.1. User variable dictionary and summary statistics (continued)

Abbreviation	Detailed Description	N	Mean	SD	Min	Max
In-House / Dine-In Attitudes						
No to Dine-In	Would not consider dine-in	386	0.155	0.363	0	1
No to In-House	Would not consider in-house delivery	386	0.166	0.372	0	1
Loyalty / Barriers to Other Options						
Preferred Rest. No In-House	Preferred restaurant has no in-house delivery	386	0.026	0.159	0	1
Reason: Diff. Account	Not using others due to different account sign-in	386	0.003	0.051	0	1
Reason: Difficult Registration	Not using others due to difficult registration	386	0.005	0.072	0	1
Reason: In-House Costly	Not using in-house because it is more costly	386	0.003	0.051	0	1
Reason: In-House Min. Order	Not using in-house due to a minimum order requirement	386	0.041	0.200	0	1
Reason: Loyal to Preferred	Not using others due to loyalty to preferred platform	386	0.060	0.237	0	1
Reason: No App Use	Does not use any app for ordering	386	0.003	0.051	0	1
Reason: Other Platform Cheaper	Not using in-house because another platform is cheaper	386	0.031	0.174	0	1
Reason: Others Expensive	Not using other platforms because they are more expensive	386	0.039	0.194	0	1
Reason: Others' Discounts	Not using others despite vouchers/discounts	386	0.034	0.181	0	1
Restaurant Unavailable Elsewhere	Preferred restaurant unavailable on other platforms	386	0.008	0.088	0	1
Sign-Up Inconvenient	Finds the sign-up process inconvenient	386	0.044	0.205	0	1
Price & Promotions (1—5 scales)						
Reason: Cheap Fee	Cited low delivery fee as a reason	386	4.176	0.735	1	5
Reason: Cheaper Transport	Cited cheaper transport costs as a reason	386	4.158	0.720	2	5

ANNEX 3.1. User variable dictionary and summary statistics (continued)

Abbreviation	Detailed Description	N	Mean	SD	Min	Max
Price & Promotions (1—5 scales)						
Reason: Premium Perks	Cited premium membership perks as a reason	386	3.863	0.796	1	5
Reason: Promo Frequency	Cited frequency of promotions as a reason	386	4.070	0.781	1	5
Reason: Promos	Cited availability of promotions as a reason	386	4.085	0.770	2	9
Price-Rise Choices (10% scenarios)						
Alt. 10% Dine-In	Would switch to dine-in under a 10% increase	386	0.031	0.174	0	1
Alt. 10% Express	Would switch to express delivery under a 10% increase	386	0.013	0.113	0	1
Alt. 10% Grab	Would switch to Grab under a 10% price increase	386	0.036	0.187	0	1
Alt. 10% In-House	Would switch to in-house delivery under a 10% increase	386	0.039	0.194	0	1
Alt. 10% None	Would choose none under a 10% increase	386	0.013	0.113	0	1
No to 10% Price Hike	Would not continue if price increased by 10%	386	0.158	0.365	0	1
Price-Rise Choices (5% scenarios)						
Alt. 5% Dine-In	Would switch to dine-in under a 5% increase	386	0.021	0.143	0	1
Alt. 5% Express	Would switch to express delivery under a 5% increase	386	0.008	0.088	0	1
Alt. 5% Grab	Would switch to Grab under a 5% price increase	386	0.023	0.151	0	1
Alt. 5% In-House	Would switch to in-house delivery under a 5% increase	386	0.010	0.101	0	1
Alt. 5% None	Would choose none under a 5% increase	386	0.008	0.088	0	1
No to 5% Price Hike	Would not continue if price increased by 5%	386	0.085	0.280	0	1
Recent Usage & Spending						
Avg. Delivery Fee	Average delivery fee per order (categorical scale)	386	3.417	1.401	1	6
Avg. Spend/Order	Average spend per order (categorical scale)	386	3.531	0.853	2	5
Exp. Last Month	Total food delivery expenditure in the past month (1–5)	386	2.694	1.373	1	5

ANNEX 3.1. User variable dictionary and summary statistics (continued)

Abbreviation	Detailed Description	N	Mean	SD	Min	Max
Recent Usage & Spending						
Use Freq. Last Month	Frequency of food delivery use in the past month (1–5)	386	1.223	0.642	1	5
Used Last Month	Used a food delivery service in the past month	386	0.575	0.495	0	1
Service Quality & Convenience (1—5 scales)						
Reason: Conv. Cooking	Cited convenience relative to cooking as a reason	386	4.174	0.751	2	5
Reason: Conv. Transport	Cited convenient transport as a reason	386	4.394	0.608	1	5
Reason: Customer Service	Cited quality of customer service as a reason	386	4.184	0.620	1	5
Reason: Delivery Time	Cited delivery speed as a reason for use	386	4.262	0.677	1	5
Reason: Ease of Use	Cited ease of app use as a reason	386	4.122	0.679	1	5
Reason: Restaurant Availability	Cited restaurant availability as a reason	386	4.049	0.721	1	5
Reason: Restaurant Choices	Cited restaurant variety as a reason	386	4.199	0.656	1	5
Switching Intent & Alternatives						
Alt. Dine-In	Alternative: dine-in	386	0.005	0.072	0	1
Alt. Grab	Alternative platform: Grab	386	0.355	0.479	0	1
Alt. In-House	Alternative: in-house delivery	386	0.124	0.330	0	1
Alt. Pickaroo	Alternative: Pickaroo	386	0.003	0.051	0	1
Consider Other	Would consider using another platform	386	0.197	0.398	0	1
Express Delivery (Gen.)	Alternative: general express delivery service	386	0.031	0.174	0	1

ANNEX 3.2. Rider variable dictionary and summary statistics

Abbreviation	Detailed Description	N	Mean	SD	Min	Max
Demographics & Human Capital						
Age	Rider's age in years.	156	33.647	7.851	21	54
College Graduate	Rider has completed college education.	156	0.026	0.159	0	1
Elementary Graduate	Rider has completed elementary education.	156	0.263	0.442	0	1
Male	Indicator for male riders (1 = male, 0 = female).	156	0.917	0.277	0	1
Some Elementary Education	Rider has completed some elementary education.	156	0.032	0.177	0	1
Some Vocational Education	Rider has completed some vocational education.	156	0.006	0.080	0	1
Vocational Graduate	Rider has completed vocational education.	156	0.013	0.113	0	1
Earnings & Price Variables (Price/Fee-related)						
Average Tip	Average tip received per delivery (₱100 units).	156	0.678	0.876	0.050	6
Fuel (Monthly)	Monthly expenditure on fuel (₱100 units).	156	28.650	20.214	0.010	100
Household Income	Monthly household income category.	156	5.474	1.939	1	12
Income: ₱8,001–11,000	Indicator for HH income ₱8,001–11,000.	156	0.038	0.193	0	1
Income: ₱11,001–15,000	Indicator for HH income ₱11,001–15,000.	156	0.115	0.321	0	1
Income: ₱15,001–18,000	Indicator for HH income ₱15,001–18,000.	156	0.141	0.349	0	1
Income: ₱18,001–20,000	Indicator for HH income ₱18,001–20,000.	156	0.160	0.368	0	1
Income: ₱20,001–30,000	Indicator for HH income ₱20,001–30,000.	156	0.205	0.405	0	1
Income: ₱30,001–40,000	Indicator for HH income ₱30,001–40,000.	156	0.205	0.405	0	1
Income: ₱40,001–50,000	Indicator for HH income ₱40,001–50,000.	156	0.071	0.257	0	1
Income: ₱50,001–60,000	Indicator for HH income ₱50,001–60,000.	156	0.026	0.159	0	1
Income: ₱60,001–75,000	Indicator for HH income ₱60,001–75,000.	156	0.013	0.113	0	1
Income: ₱100,001–130,000	Indicator for HH income ₱100,001–130,000.	156	0.006	0.080	0	1

ANNEX 3.2. Rider variable dictionary and summary statistics (continued)

Abbreviation	Detailed Description	N	Mean	SD	Min	Max
Earnings & Price Variables (Price/Fee-related)						
Rent (Monthly)	Monthly expenditure on vehicle/equipment rental (₱100 units).	156	3.421	7.516	0.010	40.000
Repairs (Monthly)	Monthly expenditure on vehicle repairs/maintenance (₱100 units).	156	14.494	14.220	0.010	100.000
Uniform (Monthly)	Monthly expenditure on uniform (₱100 units).	156	2.800	5.464	0.010	30.000
Expense Arrangement (Rent/Uniform Sub-items)						
I Do Not Buy (Equipment)	Rider reports no need to buy equipment.	156	0.006	0.080	0	1
Rentals: Deducted from Salary	Rental expense deducted from salary.	156	0.006	0.080	0	1
Rentals: Everything Provided	Company provides required equipment.	156	0.186	0.390	0	1
Rentals: Own Helmet/Box	Rider owns required helmet and insulated box.	156	0.205	0.405	0	1
Rentals: Paid at Start of Job	Rental paid upfront at job start.	156	0.269	0.445	0	1
Uniform: Deducted from Salary	Uniform expense deducted from salary.	156	0.013	0.113	0	1
Uniform: Everything Provided	Company provides required uniform.	156	0.250	0.434	0	1
Uniform: No Rent/Change Yearly	Uniform requires no rental or changes yearly.	156	0.006	0.080	0	1
Uniform: Paid at Start of Job	Uniform paid upfront at job start.	156	0.269	0.445	0	1
Geographic Location						
Luzon	Rider is based in Luzon (island group).	156	0.705	0.457	0	1
NCR	Rider is based in the National Capital Region.	156	0.468	0.501	0	1
North/Central Luzon	Rider is based in North/Central Luzon.	156	0.135	0.342	0	1
Region III (Central Luzon)	Work location: Region III.	156	0.103	0.304	0	1
Region IV-A (CALABARZON)	Work location: Region IV-A.	156	0.071	0.257	0	1
Region V (Bicol Region)	Work location: Region V.	156	0.064	0.246	0	1

ANNEX 3.2. Rider variable dictionary and summary statistics (continued)

Abbreviation	Detailed Description	N	Mean	SD	Min	Max
Geographic Location						
Region VI (Western Visayas)	Work location: Region VI.	156	0.058	0.234	0	1
Region VII (Central Visayas)	Work location: Region VII.	156	0.077	0.267	0	1
Region XI (Davao Region)	Work location: Region XI.	156	0.160	0.368	0	1
Visayas	Rider is based in Visayas (island group).	156	0.135	0.342	0	1
Motivations for Choosing Platform (Positive Reasons)						
Additional Benefits (Reason)	Chose platform for additional benefits.	156	0.250	0.434	0	1
Better Employer Treatment (Reason)	Chose platform for better treatment by employer.	156	0.212	0.410	0	1
Easy Requirements (Reason)	Chose platform due to easy compliance requirements.	156	0.006	0.080	0	1
Flexible Schedule (Reason—Other)	Other reasons related to flexible schedule.	156	0.006	0.080	0	1
Freelancing (Reason)	Chose platform for freelancing flexibility.	156	0.013	0.113	0	1
High Demand (Reason—Other)	Other reasons related to high demand.	156	0.006	0.080	0	1
High Demand / Higher Earnings (Reason)	Chose platform due to high demand or higher earnings.	156	0.801	0.400	0	1
Lower Expenses (Reason)	Chose platform to reduce expenses.	156	0.179	0.385	0	1
More Orders (Reason)	Chose platform for more ride/order opportunities.	156	0.583	0.495	0	1
No Boss/Autonomy (Reason)	Chose platform for autonomy ('no boss').	156	0.026	0.159	0	1
No Employer (Reason)	Chose platform for self-employment.	156	0.038	0.193	0	1
No Startup Cost (Reason)	Chose platform due to no startup cost.	156	0.013	0.113	0	1
Time Management (Reason)	Chose platform for better time management.	156	0.051	0.221	0	1
Well-Known App (Reason)	Chose platform because the app is well-known.	156	0.006	0.080	0	1
Fare Matrix (Pay Factor)	Pay is influenced by the fare matrix.	156	0.455	0.500	0	1

ANNEX 3.2. Rider variable dictionary and summary statistics (continued)

Abbreviation	Detailed Description	N	Mean	SD	Min	Max
Motivations for Choosing Platform (Positive Reasons)						
Fake Bookings (Pay Factor)	Pay is affected by fake bookings.	156	0.026	0.159	0	1
Incentives (Pay Factor)	Pay is influenced by incentives.	156	0.167	0.374	0	1
Length of Travel (Pay Factor)	Pay is influenced by travel length.	156	0.596	0.492	0	1
Order Cancellations (Pay Factor)	Pay is affected by order cancellations.	156	0.019	0.138	0	1
Order Processing Speed (Pay Factor)	Pay is affected by order processing speed.	156	0.019	0.138	0	1
Price per Order (Pay Factor)	Pay is influenced by price per order.	156	0.301	0.460	0	1
Rating (Pay Factor)	Pay is influenced by rider rating.	156	0.135	0.342	0	1
Traffic (Pay Factor)	Pay is affected by traffic conditions.	156	0.013	0.113	0	1
Platform Requirements (Documentation)						
Authorization Letter	Authorization letter required.	156	0.032	0.177	0	1
Barangay Clearance	Barangay clearance required.	156	0.006	0.080	0	1
Business Permit	Business permit required.	156	0.038	0.193	0	1
CI Documents	Certificate of inspection (CI) required.	156	0.096	0.296	0	1
College Graduate (Requirement)	Platform requires college education completion.	156	0.026	0.159	0	1
Deed of Sale	Deed of sale required.	156	0.032	0.177	0	1
Drug Test	Drug test required.	156	0.038	0.193	0	1
Elementary Graduate (Requirement)	Platform requires elementary education completion.	156	0.263	0.442	0	1
Health Card	Health card required.	156	0.013	0.113	0	1
ID Photo	Identification photo required.	156	0.199	0.400	0	1
Medical Certificate	Medical certificate required.	156	0.013	0.113	0	1
NBI Clearance	NBI clearance required.	156	0.865	0.342	0	1

ANNEX 3.2. Rider variable dictionary and summary statistics (continued)

Abbreviation	Detailed Description	N	Mean	SD	Min	Max
Platform Requirements (Documentation)						
Non-Pro Driver's License	Non-professional driver's license required.	156	0.968	0.177	0	1
OR/CR Documents	Official Receipt / Certificate of Registration required.	156	0.872	0.335	0	1
Police Clearance	Police clearance required.	156	0.032	0.177	0	1
Resume	Resume required.	156	0.006	0.080	0	1
SSS ID	Social Security System ID required.	156	0.032	0.177	0	1
Some Elementary Education (Requirement)	Platform requires some elementary education.	156	0.032	0.177	0	1
Some Vocational Education (Requirement)	Platform requires some vocational education.	156	0.006	0.080	0	1
TIN ID	Taxpayer Identification Number ID required.	156	0.032	0.177	0	1
Vaccine Card	COVID-19 vaccination card required.	156	0.006	0.080	0	1
Vocational Graduate (Requirement)	Platform requires vocational education completion.	156	0.013	0.113	0	1
Reasons for Not Multihoming (Barriers)						
Bad Experience on Other Apps (Reason)	Did not multihome due to bad experiences on other apps.	156	0.109	0.313	0	1
Daily Wages (Reason)	Did not multihome due to daily wage arrangement.	156	0.006	0.080	0	1
Exclusive to Company (Reason)	Did not multihome due to exclusive company arrangement.	156	0.013	0.113	0	1
Fewer Benefits/Incentives (Reason)	Did not multihome due to fewer benefits/incentives.	156	0.192	0.395	0	1
Fewer Rides on Other Apps (Reason)	Did not multihome due to fewer rides on other apps.	156	0.365	0.483	0	1
Had Previous Job (Reason)	Did not multihome because rider had another job.	156	0.006	0.080	0	1
Loyal to Company (Reason)	Did not multihome due to loyalty to current company.	156	0.032	0.177	0	1
Lower Earnings on Other Apps (Reason)	Did not multihome due to lower earnings on other apps.	156	0.455	0.500	0	1

ANNEX 3.2. Rider variable dictionary and summary statistics (continued)

Abbreviation	Detailed Description	N	Mean	SD	Min	Max
Reasons for Not Multihoming (Barriers)						
Many Requirements (Reason)	Did not multihome due to many requirements.	156	0.006	0.080	0	1
Negative Employer Treatment (Reason)	Did not multihome due to negative employer treatment.	156	0.096	0.296	0	1
Not Caused by the Pandemic (Reason)	Reason for not multihoming was unrelated to the pandemic.	156	0.006	0.080	0	1
Others Not Hiring (Reason)	Did not multihome because other companies were not hiring.	156	0.019	0.138	0	1
Requires Complete Education (Reason)	Did not multihome because complete education was required.	156	0.006	0.080	0	1
Satisfied with Current Company (Reason)	Did not multihome due to satisfaction with current company.	156	0.006	0.080	0	1
Target/Quota (Reason)	Did not multihome due to target/quota.	156	0.006	0.080	0	1
Trouble Holding Multiple Jobs (Reason)	Did not multihome due to difficulty managing multiple jobs.	156	0.013	0.113	0	1
Work Intensity & Operations						
Daily Deliveries	Average number of deliveries per day.	156	3.545	0.712	1	4
Daily Working Hours	Number of hours worked per day.	156	3.224	0.563	2	4
Motorcycle (Vehicle)	Indicator for using a motorcycle as the delivery vehicle.	156	0.981	0.138	0	1
Trip Distance 10–14 km	Typical delivery trip distance is 10–14 km.	156	0.064	0.246	0	1
Trip Distance 15–19 km	Typical delivery trip distance is 15–19 km.	156	0.019	0.138	0	1
Trip Distance 5–9 km	Typical delivery trip distance is 5–9 km.	156	0.231	0.423	0	1
Trip Distance <5 km	Typical delivery trip distance is less than 5 km.	156	0.468	0.501	0	1
Working Days/Week	Number of days worked per week.	156	3.571	0.591	2	4

Annex 4. Multiple variables endogeneity bias

The identification of a least squares estimator relies on the conditional independence assumption $E[\varepsilon \mid X] = 0$. Consider $y = X\beta + \varepsilon$ where $X \equiv [X_1 , X_2]$, with X_1 containing exogenous variables but X_2 containing multiple endogenous variables correlated with ε. The least squares estimator simultaneously estimates both β_1 and β_2 via $\hat{\beta} = (X'X)^{-1}X'y$.

While our empirical specification relies on a nonlinear logit model estimated by maximum likelihood, the identification intuition carries over. In the logit case, parameters are obtained by solving a score equation that enforces orthogonality between regressors and a nonlinear transformation of the error term. Although the estimator is nonlinear in parameters, the key identifying condition remains analogous: violations of exogeneity, i.e., correlation between regressors and unobservables, distort this orthogonality and generate biased estimates. As a result, the direction of bias induced by endogenous regressors in the logit model follows the same logic as in the linear case, even though the functional form differs. Hence, below we explain identification for OLS models.

The moment matrix partitions of $\hat{\beta}$ can be written as:

$$X'X = \begin{pmatrix} X_1'X_1 & X_1'X_2 \\ X_2'X_1 & X_2'X_2 \end{pmatrix}.$$

The inverse then has the complete block structure:

$$(X'X)^{-1} = \begin{pmatrix} A_{11} & A_{12} \\ A_{21} & A_{22} \end{pmatrix},$$

where

$$A_{11} = (X_1'M_{X_2}X_1)^{-1},$$

$$A_{12} = -(X_1'M_{X_2}X_1)^{-1}(X_1'X_2)(X_2'X_2)^{-1},$$

$$A_{21} = -(X_2'X_2)^{-1}(X_2'X_1)\left(X_1'M_{X_2}X_1\right)^{-1},$$

$$A_{22} = (X_2'X_2)^{-1} + (X_2'X_2)^{-1}(X_2'X_1)\left(X_1'M_{X_2}X_1\right)^{-1}(X_1'X_2)(X_2'X_2)^{-1},$$

and $M_{X_2} = I - X_2(X_2'X_2)^{-1}X_2'$ is the annihilator that orthogonalizes X_1 with respect to X_2.

The bias vector is $E[\hat{\beta}] = \beta + (X'X)^{-1}X'\varepsilon$. Partitioning gives:

$$E[\hat{\beta}_1] = \beta_1 + (X_1'M_{X_2}X_1)^{-1}X_1'\varepsilon + (X_1'M_{X_2}X_1)^{-1}(X_1'X_2)(X_2'X_2)^{-1}X_2'\varepsilon,$$

$$E[\hat{\beta}_2] = \beta_2 + (X_2'X_2)^{-1}X_2'\varepsilon.$$

Even with $X_1 \perp \varepsilon$, the $Cov(X_1, X_2) \neq 0$ term transmits $X_2'\varepsilon$ to $\hat{\beta}_1$.[4] The direction depends on $sign(Cov(X_2, \varepsilon))$: positive correlation yields upward bias for $\hat{\beta}_2$ and (if $X_1'X_2 > 0$) also for $\hat{\beta}_1$; negative correlation yields downward bias.

If $X_1'X_2 = 0$ (block diagonal $X'X$), then $\hat{\beta}_1$ remains unbiased despite X_2 endogeneity, a rare identifying assumption. Otherwise, simultaneity in X_2 contaminates all coefficients through the full matrix structure.

Instrumental variables with valid $Z \perp \varepsilon$ eliminates this bias via $(Z'X)^{-1}Z'y$, breaking the problematic $X'\varepsilon$ correlation regardless of the $X'X$ block structure.

Example: Consider X_1 = age of the user (exogenous), X_2 = [cross-network effect of restaurants, cross-network effect of riders] (both endogenous). The moment matrix becomes 3 × 3:

$$X'X = \begin{pmatrix} X_1'X_1 & X_1'X_{21} & X_1'X_{22} \\ X_{21}'X_1 & X_{21}'X_{21} & X_{21}'X_{22} \\ X_{22}'X_1 & X_{22}'X_{21} & X_{22}'X_{22} \end{pmatrix}.$$

Suppose $Cov(X_{21}, \varepsilon) > 0$ (restaurant network effects) and $Cov(X_{22}, \varepsilon) < 0$ (rider network effects). Then $Bias[\hat{\beta}_1] \propto (X_1'X_{21})Cov(X_{21}, \varepsilon) + (X_1'X_{22})\, Cov(X_{22}, \varepsilon)$, where positive correlation with restaurant effects pushes the age coefficient upward while negative correlation with rider effects pulls it downward, net direction indeterminate without knowing the relative magnitudes.

Since in our case most of the bias is positive, then the effect of the bias is to systematically overstate both the direct network effects ($\hat{\beta}_2$) and, through positive cross-correlations with user age ($X_1'X_2 > 0$), the age effect ($\hat{\beta}_1$) in the OLS estimates.

[4] By applying the annihilator matrix $M_{X_2} = I - X_2(X_2'X_2)^{-1}X_2'$, we invoke the *Frisch-Waugh-Lovell* (FWL) *Theorem*, which demonstrates that the coefficient estimate $\hat{\beta}_1$ is numerically identical to the regression of the "cleaned" variables $\tilde{Y} = M_{X_2}Y$ and $\tilde{X}_1 = M_{X_2}X_1$. This transformation is powerful because it renders the first term, $(X_1'M_{X_2}X_1)^{-1}X_1'\varepsilon$, innocuous: the operator M_{X_2} ensures that $\tilde{X}_1$ is orthogonal to X_2, effectively purging the variation in that is contaminated by its correlation with X_2. Consequently, the structural bias in our estimate is no longer driven by the interaction between X_1 and the error term through X_2. Instead, the bias is isolated within the final term, $(X_1'M_{X_2}X_1)^{-1}(X_1'X_2)(X_2'X_2)^{-1}X_2'\varepsilon$. This residual bias highlights the remaining endogeneity where ε is correlated with X_2, thereby allowing us to clearly distinguish between the reduction of omitted variable bias via orthogonalization and the persistent challenge of regressor endogeneity.

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The Philippine economy: no longer the East Asian exception? Revisited

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The Philippine economy has long been the East Asian outlier. In the early postwar period, with a per capita income higher than many of its neighbors, it was forecast to be one of Asia's most dynamic economies. However, beginning in the mid-1970s, its growth trajectory increasingly diverged from its high-growth neighbors. By 2000, its per capita income remained roughly the same as it had been in 1980. Nevertheless, in the 21st century, the Philippines rejoined the East Asian mainstream, growing at a rate comparable to that of other Southeast Asian counterparts and faster than its traditional comparator, Thailand. This paper explores these development dynamics and identifies key development issues that need to be addressed if the current growth trajectory is to be maintained and accelerated.

JEL classification: N15, O53, Z18
Keywords: Philippines, East Asia, macroeconomic policy, economic openness, living standards, institutions

1. Introduction

In 2018, a group of scholars produced a volume entitled *The Philippine economy: no longer the East Asian exception?* [Clarete et al. 2018]. The question mark was included because, although it was then clear that the Philippine economy had been performing quite strongly for more than a decade, there was still a widespread international perception that the country was underperforming relative to its neighbors.

This paper may be regarded as a sequel to the 2018 volume. The arguments in this paper are two-fold. First, it is now clear that the question mark can be discarded: as is evident from the Philippine growth record, the country has rejoined the East and Southeast (hereafter simply East Asia) Asian economic mainstream, growing at a rate that is broadly comparable to that of its neighbors, albeit not yet at the frontiers of the growth league. This is surely a major achievement,

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and one that reflects well on the country's leadership over the past four decades, and more importantly on their advisors, many of them drawn from the ranks of the Philippine Economic Society (PES). Second, as the country joins the ranks of the upper-middle income countries, can the growth momentum be maintained and indeed accelerated? As one of the country's leading economists, Cielito Habito, reminds readers in his *No Free Lunch* column, "the economy's economic growth had historically been narrow, shallow, and hollow."[1] Even during years of moderately strong growth, it is argued by many that living standards have risen relatively slowly, economic drivers remain narrow and vulnerable, and quality of governance remains indifferent.

This paper offers an analytical narrative of Philippine economic development, providing an outsider's perspective on these issues within a comparative regional context. It commences with a brief look backward in Section 2. Section 3, the main body of this paper, provides a narrative of achievements to date and the ongoing development policy agenda. It examines macroeconomic management, economic openness, trends in living standards, governance quality—a perennial challenge for all countries—and environmental fragilities.

This analysis draws heavily on the rich literature of the Philippine economics profession. It has been a pleasure to engage with and learn from its many enlightened and deeply knowledgeable members over the decades, dating back to 1980 as a visiting assistant professor at the venerable University of the Philippines School of Economics. In particular, I wish to record my gratitude to my long-time collaborator and friend, Arsenio Balisacan, who has been instrumental in all four volumes on the Philippine economy with which I have been involved, and which I draw upon in this paper. I also wish to thank many Filipino colleagues for their helpful advice in the preparation of the PES presentation and this paper, while absolving them from any of the views expressed below. This includes Nandy Aldaba, Roehl Briones, Dockoy Capuno, Monching Clarete, Noel de Dios, Manny Esguerra, Raul Fabella, Corina Gochoco-Bautista, Sharon Piza, J.C. Punongbayan, Majah-Leah Ravago, Gerry Sicat, Marites Tiongco, and Randy Tuaño.

2. A brief look backwards

Table 1 clearly supports the proposition that in the 21st century the Philippines is no longer the "exception", as it rejoined the East Asian mainstream. These are Maddison Project per capita income estimates based on international 2011 prices.

From 1970 to 2022, the Philippines lagged behind all the regional comparators in the table, except for Latin America. This was due to its performance in the latter part of the 20th century, when it also lagged global growth. It was not included in the World Bank's [1993] influential "Miracle" study. It also largely

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[1] These and similar descriptors have been used frequently in Philippine economy literature. More than 50 years ago, the acclaimed Ranis report (ILO 1974) opened by characterizing the post-independence record as one of "narrow participation and unbalanced growth".

missed out on the massive 1980s relocation of economic activity from Japan (and later the newly industrializing economies) to Southeast Asia in the wake of the Plaza Accord and exchange rate realignment. India was then still closed. Vietnam had yet to embark on its *Đổi Mới* reforms. China's reforms were in their infancy. The beneficiaries were the Southeast Asian economies that were politically stable and had undertaken major economic reforms, notably Indonesia, Malaysia, and Thailand. By contrast, in the 21st century, the Philippines grew faster than its traditional comparator, Thailand, as well as the global and Latin American averages, and only marginally slower than the increasingly dynamic South and Southeast Asian average.

TABLE 1. Long-term Asian economic growth

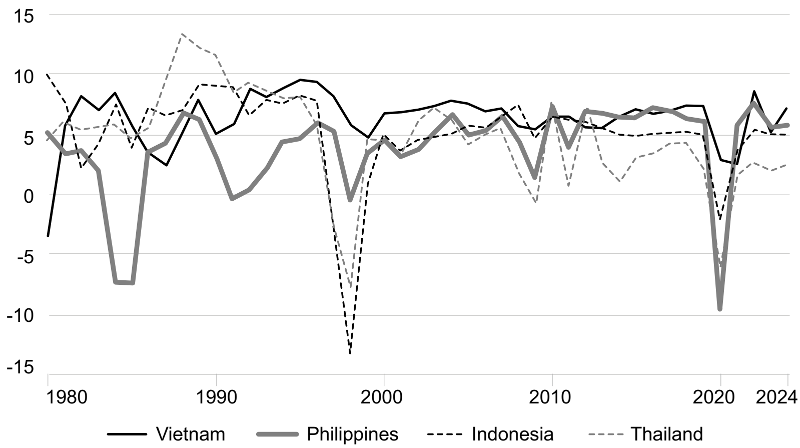
	1970	2000	2022	2022/1970	2022/2000	2000/1970
Indonesia	1882	5384	12802	6.8	2.4	2.9
India	1384	2753	7786	5.6	2.8	2.0
China	1398	4730	19238	13.8	4.1	3.4
Philippines	2812	4034	8371	3.0	2.1	1.4
Thailand	2700	9627	16421	6.1	1.7	3.6
Vietnam	1172	2773	8050	6.9	2.9	2.3
World	5952	9915	16667	2.8	1.7	1.7
South and Southeast Asia	1546	3427	8377	5.4	2.4	2.2
Latin America	6286	10225	14028	2.2	1.4	1.6

Source: Maddison Project dataset, '000, 2011 prices

This article is not the platform for revisiting the reasons behind the country's revitalized economic trajectory, which has been extensively documented in Philippine economic literature. However, three general observations are pertinent.

First, as Figure 1 illustrates, the Philippines' growth dynamics have differed from those of its neighbors. It has not experienced as distinct a break in the growth path—resulting from a major reform episode that ushered in a sharp transition from slow to fast growth—as occurred in China after 1978, India after 1991, Indonesia after 1966, and Vietnam after 1986. The Philippines was also the only major Southeast Asian economy to experience a deep economic crisis in the mid-1980s. This was the era of rising global interest rates, driven by the Volcker assault on inflation in the United States of America (USA) and declining commodity prices. These events pushed many developing-country commodity exporters into recession, but the East Asian economies—both net energy exporters and importers—largely avoided the same fate. For the Philippines, this was essentially a home-grown crisis (Punongbayan [2023] and Punongbayan and De Dios [2026]). Moreover, the Philippine growth record differs from its neighbors in two additional respects. It avoided the worst of the 1997 to 1998 Asian financial crisis because it did not receive massive capital inflows on a comparable scale to those of its neighbors [Noland 2000]. By then, its stronger macroeconomic policy framework was in place. Though it is not as dependent on tourism as some of its neighbors—particularly Cambodia and Thailand—it was the most severely affected during the 2020 to 2021 COVID-19 pandemic because of its prolonged economic shutdown.

FIGURE 1. Economic growth, Philippines and its neighbors (1980-2024)



Source: International Monetary Fund (2025), OurWorldinData.org/economic-growth

A second observation is that the drivers of the Philippine economic revitalization are already well understood, making it unnecessary to run "two million regressions" [Sala-i-Martin 1992] to explain them. A casual inspection of Figure 1 clearly indicates that economic growth took hold from the mid-1990s. By this time, a semblance of political stability had been restored, an avowedly reformist administration was in place, a reconstituted and effective central bank had been established, and a program of economic liberalization was underway. The country was not the "democratic dud" that leading development economists viewed it as [Pritchett 2003]. Nevertheless, recovery remained uneven and narrowly based at the sectoral level. In the case of agriculture, for example, the problems that David [2003] identified at the beginning of the century persist, and this sector has continued to underperform, especially compared to the agricultural dynamism evident in most of its neighbors.

Third, equally important to major policy reforms were how they were formulated and implemented. Here, the seminal contribution provided by de Dios and Hutchcroft [2003] is illuminating, a point to which we return below. Additionally, it is important to note the role of the Philippine Institute for Development Studies (PIDS) as an originator and proponent of economic policy reform. A uniquely important policy-oriented think tank in Southeast Asia, it owes much of its success to its visionary founder, Dr. Gerardo Sicat. As he explains in his retrospective memoir to celebrate the organization's 40th anniversary, he needed the analytical ammunition to win policy battles in Cabinet [Sicat 2017]. PIDS's influence has waxed and waned across administrations, but it is surely a credit to the country's leadership that it has been maintained. Credit also goes to successive PIDS leaders for the institution's successful transitions through the very different political environments of the authoritarian and the democratic eras.

3. Achievements and challenges

Can the growth momentum be maintained and accelerated? Can the benefits be more evenly shared? What factors could disrupt progress? The remainder of the paper addresses these questions under five headings.

3.1. The macroeconomic success story

Competent macroeconomic management has clearly been the cornerstone of the Philippine economic revival. The earlier boom and bust growth pattern had its origins in fiscal deficits (especially during election periods) being monetized in the context of a fixed exchange rate regime, resulting in periods of real effective exchange rate appreciation, loss of competitiveness, temporary import disruptions, and economic slowdowns [Baldwin 1975]. The establishment of the Bangko Sentral ng Pilipinas (BSP) in 1993, combined with generally greater fiscal prudence, was transformational. It led to a permanent reduction in inflation, as indicated in Table 2. The floating rate regime, progressively introduced, insulated the economy from external shocks, both positive and negative, and reduced borrowing costs. The professional integrity of the BSP has been maintained through the appointment of credible, well-regarded, and mostly apolitical senior staff.

The fiscal situation has also greatly improved. For example, the December 2024 International Monetary Fund (IMF) Article IV consultation reports positively. The public debt to Gross Domestic Product (GDP) ratio is relatively high—around 60 percent but manageable with substantial financing through longer term concessional and local peso-denominated sources. The Fund report also concludes that "systemic risks within the financial system are moderate, but pockets of vulnerability remain … mainly in commercial real estate" [IMF 2024]. Philippine fiscal policy has also managed to avoid some of the problems that its neighbors are grappling with. Unlike Indonesia, it does not maintain fuel subsidies that have long burdened government budgets and proved so politically sensitive that reform has appeared impossible [Hill 2026].[2] Additionally, the Philippines does not face the Malaysian conundrum of a large, opaque public enterprise sector (termed "government-linked corporations") that has essentially been captured by the political class, as graphically described by Gomez [2025].

[2] The fuel subsidies have typically been in the range 1.5 to 2.5 percent of GDP in a budget with a weak tax effort, usually around ten to 12 percent of GDP.

TABLE 2. Comparative "competitiveness" indicators

Indicator	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam	Cambodia	India
Trade/GDP[1]	40	159	56	212	119	179	177	34
Inflation[2]	6.0	2.1	3.9	1.8	2.0	6.0	3.9	6.2
Services openness[3]	0.37	0.29	na	0.2	0.37	0.34	na	0.29
FDI openness[4]	0.35	0.26	0.37	0.06	0.27	0.13	0.05	0.21
Economic freedom[5]	64	66	59	84	59	63	55	53
Logistics[6]	3.0	3.6	3.3	4.5	3.5	3.3	2.4	3.4
R&D/GDP[7]	0.28	0.95	0.32	2.16	1.33	0.43	0.12	0.65
Test Score I[8]	359	388	347	543	379	469	329	n/a
Test Score II[9]	366	409	355	575	394	462	336	n/a
Corruption[10]	96	62	117	4	110	87	157	85
Legal quality[11]	45	68	33	99	55	48	21	55
Governance quality[12]	66	79	56	100	58	59	37	63

1. Trade/Gross Domestic Product (GDP): sum of exports plus imports divided by GDP
2. Inflation: annual average increase in the consumer price index, 2000-2023 (World Bank)
3. Services openness: Organisation for Economic Co-operation and Development (OECD) Services Trade Restrictiveness Index (A higher index denotes greater restriction.)
4. FDI openness: OECD Foreign Direct Investment (FDI) Restrictiveness Index (A higher index denotes greater restriction.)
5. Economic freedom: As defined by the Heritage Foundation (A higher index denotes better quality.)
6. Logistics: World Bank Logistics Performance Index (A higher index denotes better quality.)
7. R&D/GDP: Research and development expenditure divided by GDP, World Bank database.
8. – 9. Test Score I and II: Programme for International Student Assessment (PISA) OECD test scores for 15-year-olds in 2022 for reading and mathematics, respectively.
10. Corruption: Transparency International Corruption Perceptions Index, 2021, 180 jurisdictions ranked (A lower ranking denotes less corruption)
11. – 12. Legal and Governance quality: World Governance Indicators, rule of law, and government effectiveness, respectively, percentile rank (A higher number denotes higher quality.)

Of course, the unfinished fiscal policy reform agenda is a long one, as clearly articulated by Gochoco-Bautista [2025]. Major questions concern the efficiency and transparency of the ambitious (and sorely needed) public sector infrastructure program, the Maharlika Investment Corporation sovereign wealth fund (Malaysia's 1MDB and Indonesia's *Danantara* are cautionary tales for the Philippines), the egregious corruption revealed in the flood control projects, the unresolved issues in central and local government finances, and the probable contingent liabilities that are yet to be revealed. Going forward, there is a strong case for legislated fiscal rules, despite the rigidities they introduce,[3] and rigorous anti-corruption measures, an issue to which we return below.

3.2. Incomplete economic liberalization

There are at least four distinct features of the Philippine approach to economic liberalization. First, it had a prolonged period of import substitution, from which it was extremely difficult to extricate, and in which the eventual liberalization lagged behind much of East Asia. Second, it is an excellent case study in the "power of ideas," in which economic proselytizing, mostly by past and present PES members, finally won the day, albeit at a high cost. Successful models of export-oriented industrialization elsewhere in the region, and the associated country reputations that underpinned these successes, meant that the country lost out on huge investment, employment, and technology opportunities. Third, the country's major export success has been in services, notably through its business process outsourcing (BPO) industry. In some measure, this was an "accidental" success story, a spinoff from the telecommunications reforms that were enacted in the 1990s—a proposition that I appreciate will be controversial in some quarters. Fourth, the liberalizations have been incomplete, resulting in the country continuing to miss out on lucrative commercial possibilities.

Philippine BPOs have been a remarkable success story, arguably the country's most important business achievement over the past three decades. It is an illustration of the proposition that once countries liberalize, the results are inherently difficult to predict. Opening up exposes the country to global economic currents that may not have been foreseen at the time of the reforms.

In a little over a decade, BPO revenues have overtaken remittances (Figure 2). In 2010, BPO revenues were 47 percent of remittances, while in 2024 they were 110 percent. To oversimplify greatly, remittances may be taken as a proxy indicator that the labor exporting country is not creating enough desirable jobs,[4]

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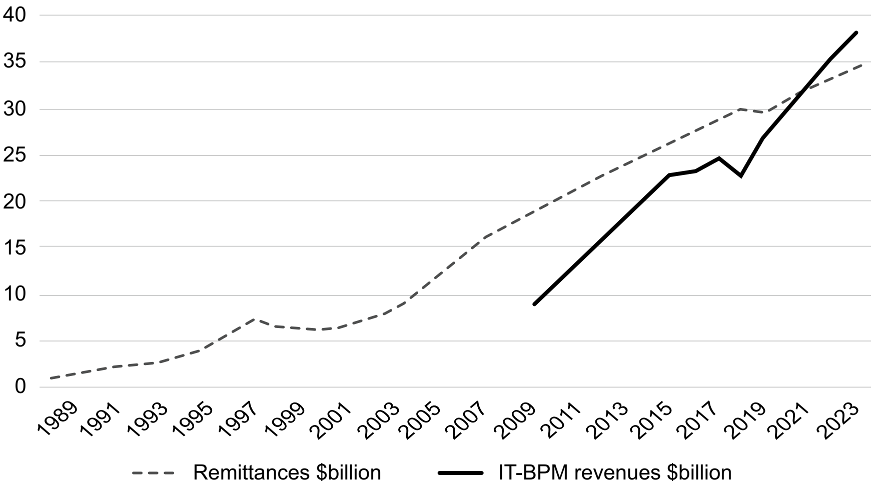
[3] That these fiscal rules have been increasingly popular is evident from their increasing adoption, as indicated in the IMF Fiscal Rules Database. For example, they have been helpful for successive Indonesian finance ministers since the introduction of that country's 2003 Fiscal Law, which capped the permitted deficits at three percent of GDP, and public debt at 60 percent at GDP. This is despite the fact that they have not supported stronger fiscal mobilization by eliminating the fuel subsidies and lifting the tax effort.

[4] Of course, the issues are much more complicated than this. Labor markets are globalizing rapidly and increasingly across the skill spectrum. Moreover, recent research suggests that the local (i.e., in the Philippines)

while rising BPO revenues demonstrate that the host country is an attractive investment location.

FIGURE 2. Remittances and BPO revenues (1990-2024)



Sources: Remittances from Bangko Sentral ng Pilipinas; BPO revenues from the Philippine Statistics Authority and IT-Business Process Association of the Philippines. I am grateful to Kelly Bird for providing these data.

My reading of the BPO story is that its growth has been the fortuitous combination of four factors. First, the global telecommunications revolution got underway in the 1990s and transformed the international trade in back-office services. Second, telecommunications liberalization in the Philippines in 1993 transformed a system that, in the words of Abrenica and Llanto, had been characterized by "inadequate supply and poor quality of telephone services" with telephone density of just one percent and a de facto monopoly supplier (i.e., PLDT), into a sweeping liberalization such that "few developing economies have been as bold as the Philippines in its telecommunications market reforms" [2003:262, 265]. Third, the Philippines possessed a latent comparative advantage in this rapidly emerging industry, in particular, its large pool of college-level graduates fluent in English and employable at internationally competitive wage rates. Fourth, the telecommunications reforms were part of a general trade and investment liberalization that occurred during the Ramos presidency. These reforms also included the establishment in 1995 of the Philippine Export Zone Authority that streamlined regulatory procedures and provided investment incentives for firms operating within its zones. The liberal interpretation of the Special Economic Zone (SEZ) law from 2000 onwards allowed BPOs housed in metropolitan buildings to operate under its jurisdiction.

developmental impacts are more positive than many believe (see Khanna et al 2026). As always, much depends on whether the labor movements are permanent ("brain drain") or return ("brain gain").

Putting aside the question of how Artificial Intelligence (AI) will affect BPO operations—the subject of another paper—one puzzle is why the BPO success story has not been replicated in other sectors. If the Philippines is competitive in the provision of one semi-skilled, labor-intensive activity, why does it not perform well in others? The answer is a reminder that in the provision of heterogeneous goods and services, comparative advantage is the starting point of inquiry, but industry-specific information is also required. We illustrate this proposition with reference to two rapidly growing export-oriented sectors in which the Philippines could and should have performed strongly but, to date, has not. Like BPOs, these are sectors in which the country has strong latent comparative advantage but in which, unlike the BPO case, the necessary regulatory and other reforms have not been undertaken. In both cases, policy inaction has resulted in significant losses of employment, investment, and technology.

The first case is participation in global production networks. There has been a revolution in the industrial organization of global production networks since the 1980s, with much of the dynamism centered on China and the rest of East Asia. Much of global manufacturing and, increasingly, agriculture and services output is organized into complex multi-country supply chains, with tasks and intermediate inputs allocated across countries according to their comparative advantages and business environments. For example, simple labor-intensive activities will locate in lower wage economies, while more research & development-intensive activities locate in countries with the requisite technological capabilities. An open economy, including signing on to the World Trade Organization Information Technology Agreement,[5] and efficient international logistics are essential for delivery to the next production stage.

These networks are the main drivers of the dramatic growth in total and manufacturing trade. For example, global manufacturing trade rose from US$1.2 trillion to US$12 trillion, much of it occurring within global manufacturing value chains (GMVCs) from 1988 to 2022. Over this period, Southeast Asia's share of total global trade rose from three percent to eight percent. Within manufacturing trade, GMVCs account for 70 to 80 percent over time., Within that trade, the Southeast Asian share has risen faster still, from 1.8 percent to 8.4 percent.[6]

Table 3 clearly shows that the Philippines has underperformed in this rapidly growing sector. In the 20th century, Singapore, Malaysia, and Thailand, were the main Southeast Asian participants, while in the 21st century, Vietnam has emerged as the largest exporter. In the latter period, Southeast Asian exports rose by about 250 percent (in nominal US$ through 2019 to 2020), while the Philippines' total hardly increased. In fact, it was the lowest among the Association of

[5] This agreement resulted in the removal of import duties on products, which were valued at roughly US$1.6 trillion in 2013. Today, these products represent about ten percent of worldwide merchandise exports, making the information technology sector one of the most rapidly expanding areas of global trade.
[6] For an analysis of Southeast Asian trade in GMVCs, see Athukorala and Hill [2026]; for a Philippine case study, see Athukorala [2022].

Southeast Asian Nations (ASEAN) Six, behind even fellow laggard Indonesia. Two additional features of the Philippine record deserve comment, as discussed further by Athukorala [2022]. First, the Philippine performance was moderately strong during the 1990s, indicating that the reforms of the Ramos era produced dividends. Second, like most of its neighbors, the Philippines heavily concentrated on GMVC products as manufactured exports, indicating that the problem is not the concentration in these items but that manufactured exports in total are so small.

TABLE 3. The Philippines and global manufacturing exports

	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam	SE Asia
GMVC exports, US$ billion							
1979/80	0.1	1.9	1.3	3.1	0.7	0	7.2
1989/90	2.5	11.7	4.1	19.8	6.5	0	45.8
1999/00	19	74.2	35.1	64.9	39	5.2	239.4
2009/10	35.6	72.4	24.6	62.9	86.2	30.7	317.9
2019/20	49.7	101.8	39.5	70.8	125.6	173	586.8
GMVC share in total manufacturing exports (%)							
1979/80	34.6	73.6	67.8	70.7	48.9	34.9	66.5
1989/90	40.8	83	77.2	84.4	58.6	46.5	76
1999/00	59.1	86.6	94.3	84.4	75.9	80.3	82
2009/10	62.6	74	85.5	64.7	71.5	70.2	70.5
2019/20	58.3	74.2	88.6	62.1	71.4	79.2	72.9
2019/20	64.3	91.7	93	99.2	94.5	63.4	78.8

Source: I am grateful to Arianto Patunru for providing these data. For more detailed statistics see the tables in Athukorala and Hill (2026).

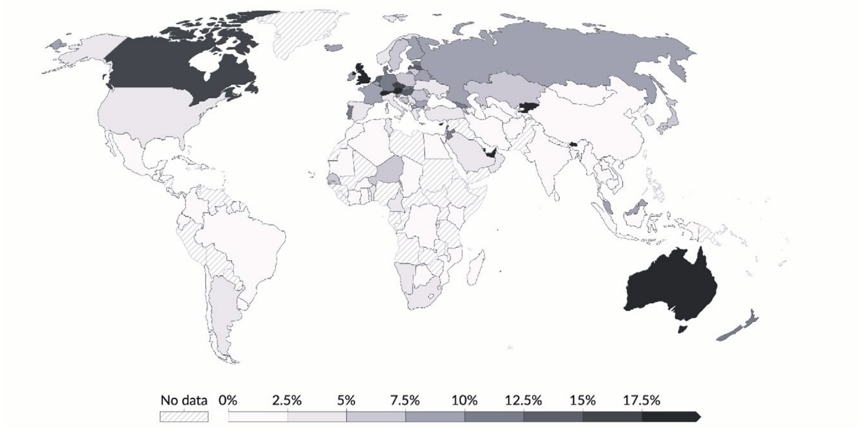
If latecomer Vietnam can succeed so spectacularly, why does the Philippines struggle to despite a more established industrial history?

From 1999 to 2000, Philippine GMVC exports were almost seven times those of Vietnam, but by 2019 to 2020, Vietnam's GMVC exports were four times larger. Success in global manufacturing production networks is no mystery, as multiple East Asian success stories have illustrated. These networks are also open to reforming latecomers like Vietnam. The comparative indicators in Table 2 help us to answer the question, as the Philippines lags in most of the policy areas that are key determinants of GMVC success: relatively restrictive foreign direct investment (FDI) policy, average logistics performance, and indifferent governance. It is also important to note here that, contrary to much popular opinion, these are not highly footloose "sweatshop" operations. GMVC enterprises usually pay above-average manufacturing wages, and they typically embed in the host country economy owing to the significant startup and local learning costs.[7]

[7] See Athukorala and Hill [2026] for a discussion of these issues.

The second missed opportunity has been in tertiary education. United Nations Educational, Scientific and Cultural Organization (UNESCO) data document the rapid growth of tertiary education enrollments, with the global gross enrollment ratio now about 43 percent of the relevant age cohort. The number of students studying abroad is also growing rapidly, having tripled this century to about 6.9 million students in 2023. The Philippines could and should be a significant global player in this industry. It has a workforce and learners with strong proficiency in English (the lingua franca of international tertiary education). It has well-established universities. It is culturally open and welcoming. It is proximate to the fastest growing sending nations, particularly China and India. Host countries also benefit from foreign students: they create good teaching and research jobs, they contribute to the recipient country's "soft power" internationally, and there are spinoffs in tourism and other sectors.

FIGURE 3. Shares of foreign students by country (2023)



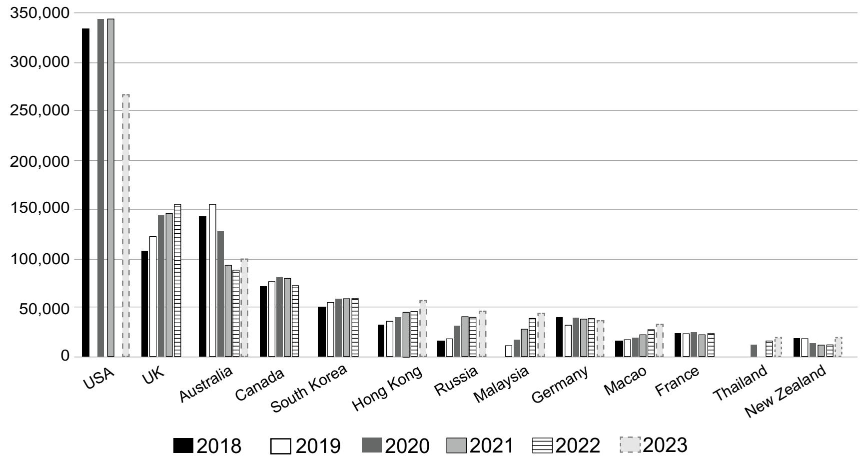
Source: UNESCO Institute for Statistics (2024), OurWorldInData.org/global-education.
Note: Values can be greater than 100 percent when there are more international than domestic students.

However, the Philippines is a very minor player in this sector, as Figures 3 and 4 illustrate. Figure 3 indicates that, while foreign students generally go mainly to rich countries (the United States of America, the United Kingdom, Australia, and Canada are the major players), developing countries can also enter this market. A notable, if improbable, destination is Kyrgyzstan. It was the first of the former Soviet republics in Central Asia to undergo economic and political liberalization. It was able to build on its educational strengths developed during the Soviet era, and it welcomed foreign universities which also attracted international sponsorship.[8] Closer to home, Malaysia is the major Southeast Asian player in the internationalization of higher

[8] Notable examples include the University of Central Asia and the American University of Central Asia, both of which deliver internationally recognized English language degree programs. See Yamano, Hill, Ginting, and Samson [2019].

education, attracting students from all corners of the world (see Figure 4 for the destination of Chinese students). Tham Siew Yean and colleagues [2013] explain the drivers of Malaysian success: an open policy towards the establishment of private universities, both foreign and domestically owned; a liberal attitude towards international employment and student visas, a strong domestic education base on which to build; a widespread use of English; a safe living environment; and a multicultural society welcoming to students from China, Moslem majority nations, South Asia, and elsewhere. Perhaps in time, the Philippines will emerge as a significant player, especially after the enactment of Republic Act (RA) 11448 in 2019, which liberalized the entry of foreign universities.

FIGURE 4. Destination of Chinese students abroad (2018-2023)



Source: "Why are Chinese students choosing higher education in Asia?", *Fulcrum* 2025/270, https://sealionplus.iseas.edu.sg/nodes/view/97455. Based on UNESCO data.

3.3 "Sharing in development"

Compared to most of its neighbors, Philippine living standards have risen more slowly and social mobility has lagged. "If we're so smart, why aren't we rich?" was the lament of De Dios and colleagues in 1995. Two decades earlier, the landmark International Labor Organization (ILO) entitled its influential report *Sharing in Development*.

I have little to add to the rich literature on Philippine living standards by Balisacan and his colleagues.[9] In this section, I simply make three general observations.

First, increased economic growth has obviously translated into improved living standards, albeit not quite as fast as some of its neighbors but respectable, nonetheless. Table 4 shows trends over the 21st century according to the internationally

[9] See, for example, the essays in Parts 3 and 4 of the Balisacan festschrift (Hill et al [2022]), and the references cited therein.

comparable World Bank PovcalNet estimates. Using the US$3/day benchmark, Philippine headcount poverty has fallen significantly, from 25.9 percent to 5.3 percent, to a level that is comparable to middle-income peers India and Indonesia. However, even though its growth rate has been comparable (if somewhat slower), poverty has fallen at a much slower rate, especially compared to Vietnam. In other words, poverty has been less responsive to growth in the Philippines.

TABLE 4. A comparative poverty perspective

Country	Initial poverty (percent)	Final poverty (percent)	Difference	Difference/ year
India	46.4 (2004)	5.3 (2022)	41.1	2.3
Indonesia	65.7 (2000)	6.7 (2023)	59	2.6
Philippines	25.9 (2000)	5.3 (2023)	20.6	0.9
Thailand	8.4 (2000)	neg (2023)	8.4	0.4
Vietnam	43.3 (2002)	1.6 (2022)	27.3	1.4

Note: Comparative poverty estimates, 21st century, $3/day, 2021 PPP.
Source: World Bank, https://pip.worldbank.org.

What of education and health indicators? Here, too, there has been significant improvement, but here, too, the neighbors have mostly caught up to—and in some cases overtaken—the Philippines (Table 5). Among the same four comparators, indicators for 1960 draw attention to the Philippine initial advantages, in years of schooling (especially), life expectancy, and infant mortality. However, by 2020 the other countries had at least caught up to the Philippines. On education quality, according to the PISA test scores reported in Table 2 above, the Philippines performs poorly, with the lowest scores among the ASEAN Six. Perhaps the one distinctive advantage the country still retains is the absence of a gender gap in education, although Philippine female labor force participation remains relatively low, particularly among poorly educated women.

TABLE 5. Comparative education and health indicators

Indicator	India	Indonesia	Philippines	Thailand	Vietnam
Life expectancy 1960	46	47	59	51	58
Life expectancy 2023	72	71	70	76	75
Infant mortality rate 1960	151	145	61	113	60 (1965)
Infant mortality rate 2023	25	17	22	8	14
Years of schooling 1960	1.2	1.7	3.5	2.7	n/a
Years of schooling 2020	7.8	9.1	9.4	9.3	8.3
Male-Female gap 2020	2.2	0.7	-0.4	0.3	0.8
Gross Enrollment Ratio Secondary 2022	82	99	94	102	97
Child stunting 2022	32.9	22.6	27.7	12.3	19.2

Source: World Bank Development Indicators database.

Second, the reasons for the relatively low poverty-growth elasticity are fairly well understood. At least four factors appear to be relevant:

a. The tax and transfer system is, at best, weakly progressive.
b. The education and health systems have little, if any, redistributive impact.
c. The labor market has not been providing enough decent, formal sector jobs.
d. The persistence of severe regional pockets of poverty, some of which are conflict-related, continues.

Regarding education, the early Philippine advantage has largely evaporated, and the system also performs poorly on equity grounds. A leading education authority concludes as follows:

> Access of the poor and other disadvantaged groups to education is a continuing concern … Enrolment and completion rates are particularly low for children in depressed rural communities, urban slums, and among indigenous groups. In 2011 net enrolment rates in secondary education for the poorest quintile were 35 percentage points below that of the richest quintile. … A tertiary education is also beyond the reach of most poor families [Villamil 2018].

In a similar vein, Kelly Bird and Sharon Faye Piza argue in an unpublished paper that "in studying the returns to education of Filipinos across the income distribution, we discovered that the returns were falling for workers in low-income groups and rising for those in high-income groups, indicating the diminishing effects of investments in education on income inequality." The World Bank (forthcoming) largely corroborates these findings, in that children's education outcomes closely track those of their parents.

A plausible conjecture, therefore, is that children from low-income households receive rather poor education in public schools, especially outside the major cities, and they enter a workforce that is characterized by continuing high levels of informality, insecurity, and low earnings. The latter occurs because Philippine labor regulations remain relatively restrictive and, owing to its indifferent industrialization performance, the country has generated too few low-skill formal sector jobs. By contrast, the booming BPO sector has created "good jobs," but these are available only to college graduates who generally come from better-off families. Moreover, international employment opportunities are reinforcing this pattern, since the growth areas are in more skilled occupations such as nursing. In other words, it appears to be the interaction of the education system and the labor market that is contributing to the low poverty-growth elasticity in the Philippines.[10]

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[10] There is also a debate concerning the impact on educational outcomes of the proliferation of local ("mother tongue") languages in the public education system since 2012. Igarashi, Maulana, and Suryadarma [2024] argue that it has contributed to weaker educational outcomes in certain regions. However, PIDS research by

Evidently, the health system is exacerbating these problems. Philippine health professionals are famous around the world, but the domestic public health system, which was decentralized in 1993, is severely under-resourced. Banzon and Ho [2018] conclude as follows: "Income, regional, and rural-urban differences [in infant mortality rates] are glaring, with some approximating the levels found in high-income and others low-income countries." The prolonged COVID-19 lockdowns, presumably motivated in part by weaknesses in the public health system, not only resulted in a very severe economic contraction but also led to serious education scarring, as children from poor families attending public schools with rudimentary internet access had limited opportunities to transition to online education.

These conclusions may be too gloomy. The major World Bank (forthcoming) report paints a more positive picture. It observes that over the period 2012 to 2023, excluding 2018 to 2021, headcount poverty fell by 7.7 percent a year. Moreover, income growth since 2012 has been faster among the poor and rural dwellers, and some spatial convergence is evident. Nevertheless, 43 percent of the population is either poor or near poor/vulnerable, a proportion that is declining slowly. The report also confirms research suggesting that the country's frequent shocks from natural hazards disproportionately affect the poor, compounded by incomplete social protection during these events.

A reasonable conjecture is that our third major observation, the introduction of the Pantawid Pamilyang Pilipino Program (4Ps) conditional cash transfers, is beginning to have positive distributional and economic effects. This is surely the most important social policy innovation during the country's democratic era. Assessments of its impacts are generally positive (see for example Capuno [2025]). It is arguably time to scale it up and extend it to more near-poor, vulnerable households. For the conditionalities to be effective, investments in local-level public education and health facilities would also be necessary. The Philippines has the fiscal space to be able to aspire to these goals.

3.4. Has governance improved?

The following quotations from six expert authorities on Philippine political economy and institutions illustrate what a vexed issue governance has always been, as it is in practically all countries.

Mendoza and Olfindo [2018] offer an optimistic perspective: "In recent years the Philippines has made impressive strides in improving its governance and institutions…"

However, McCoy [2015] presents a critical assessment of the structural roots of the country's persistent development challenges:

Abrigo et al. [2025] disputes this causal claim. While emphasizing the importance of the general education quality, they conclude that this policy increased student continuation rates by nine to 12 percentage points.

> The country's recurring crises [have arisen] arguably from a fusion of political power and rent-seeking, reducing both opportunity and prosperity. For the foreseeable future it seems unlikely that the Philippines will undertake the broad institutional reforms and shifts in oligarchic control that would allow it to move beyond the [country's] corruption, poor legal protection, and perverse institutions.

De Dios and Hutchcroft share a scorecard on reform during the economically successful Ramos administration [2003]:

a. Economic liberalization: "significant achievements"
b. Institutions: "much 'harder' than the earlier 'easy' tasks of liberalization"
c. Redistribution: "The social reform agenda was notably ineffective."
d. Political system: The administration "consistently had to rely on old-style pork-barrel politics in order to promote new-style economics."

Gochoco-Bautista [2025] argues that the country's limited economic resilience stems primarily from weak institutions and poor governance:

> The main reason for the lack of public (as well as private) investment [in critical public goods such as climate change adaptation, health, education, and IT connectivity] is the presence of weak institutions and poor governance, characterized by a political economy process which provides many opportunities for rent-seeking behavior that benefit a narrow set of interests, and where adherence and sensitivity to the rule of law is lacking. Overcoming the problem of weak institutions and poor governance requires a change in the incentive structure faced by key institutions, with clear criteria and targets set and performance tied to tenure in office, so as to make government officials more accountable to the people.

Whereas social scientists, as in this paper, can make informed assessments of macroeconomic management, economic openness, and poverty, evaluating governance quality—much less measuring it empirically—remains a fraught exercise. Reforming presidents come and go. The quality of cabinet appointments within and across administrations is highly variable. State institutions whether legal, financial, political—and the quality of appointments to them—also vary over time. At the local government level, leadership ranges from islands of excellence to entrenched dynastic capture. Press freedom waxes and wanes.

In thinking through these issues, two widely cited dictums provide additional analytical guidance. Shleifer and Vishny [1993] opine that "the only thing worse than organized corruption is disorganized corruption", while Klitgaard [1998] observes that "corruption = monopoly + discretion – transparency". The various comparative indicators reported in Table 2 above on governance quality, legal quality, and corruption portray a mixed but somewhat negative story.

The Philippines generally scores below its middle-income ASEAN neighbors, for example. Although the country scores better on press freedom (and has the region's only journalist to have received a Nobel Prize), the 2025 Reporters Without Borders (RSF) ranking is 116 for the 180 jurisdictions surveyed, albeit rising as compared to the Duterte years. These indicators are of course, at best, indicative. They are highly subjective, they reflect the biases of their sponsoring institutions, and they vary considerably over time. In particular, the evaluations on which estimates are based were generally conducted during the Duterte administration, at a low point in the quality of public administration.

Viewed in comparative Southeast Asian perspective, there are at least three observable features of Philippine governance to note. First, like most of its neighbors, the notion of "technocracy" is more evident in appointments to key economics portfolios such as BSP, Department of Economy, Planning, and Development, and Department of Finance. These institutions are at least partially "insulated" from political pressures (though technocratic appointees still need to be politically acceptable). This is central to the country's improved macroeconomic management. Other cabinet and senior appointments are more likely the domain of political parties and vested interests, regardless of particular administrations, and their quality, therefore, is more variable, within and across administrations.

Second, reflecting its distinctive political system, there appears to be greater turnover at senior levels in the bureaucracy between administrations in the Philippines. It remains an open question whether this has affected governance quality. For example, are there issues related to institutional memory and policy continuity? Are there transition issues related to the new executives familiarizing themselves with their portfolios and "lame duck" periods towards the end of their tenure? To the extent that senior civil service salaries lag behind those in the corporate and academic sectors and international organizations, is the talent pool from which bureaucratic appointments are drawn too restricted?

Third, the Philippines was the first ASEAN country to embark on a comprehensive decentralization program. More than three decades later, has there been any discernible improvement in local governance, beyond what might have been expected over the course of economic development? The fiscal federalism literature hypothesizes that local government quality should improve as these administrations are closer and more responsive to community aspirations especially when, as in the Philippines, decentralization was accompanied by democratization. In neighboring Malaysia, for example, which adopted a federal model at the time of independence, the state of Penang is the most dynamic local economy, thanks to its high-quality state government, in addition to inherited advantages of international orientation during the colonial era and good educational institutions [Athukorala 2014].

Yet the evidence on the quality of local governance in the Philippines appears to be mixed, with many local governments essentially controlled by "dynasties" (see the essays in Balisacan and Hill [2007], especially de Dios and Capuno). The evidence for Indonesia, which likewise democratized and decentralization a decade later, also following a deep economic crisis, is similarly mixed [Lewis 2023].

There are no short cuts to improved governance quality. Effective anti-corruption drives start with rigorous and independent checks on government, transparency, media freedom, and deeper reforms of public sector incentives referred to above. Anti-corruption agencies have a mixed record in Southeast Asia, and no country has yet had the courage to establish an institution modelled on Hong Kong's Independent Commission Against Corruption (ICAC). Indonesia's *Komisi Pemberantasan Korupsi* (KPK) or Corruption Eradication Commission arguably came the closest in its early years. It successfully prosecuted ministers, regional governors, and senior bureaucrats, until it was muzzled by the political class during the second Jokowi presidency, which, it should be noted, remained popular throughout its decade in power [Jaffrey and Warburton 2025]. In addition to its professionalism and independence, the KPK had prosecutorial powers, an essential prerequisite according to long-time Thai anti-corruption campaigner Medhi Krongkaew [Khoman et al. 2012]. The remit of these agencies is particularly important in sectors that are prone to rent-seeking, such as large-scale infrastructure projects and land policy. Strong and independent competition commissions are crucial, especially for non-tradable sectors and where import protection is high. The work of the Philippine Competition Commission is, therefore, crucial.

3.5. Environmental challenges

The Philippines faces immense environmental challenges, ranging from deteriorating urban amenities to extreme climate change vulnerability. These challenges arguably cannot wait until the forces implicit in the transition through the environmental Kuznet's Curve take effect. We illustrate these issues with reference to two of the country's major environmental challenges: managing Metro Manila urban agglomeration and climate change.

Metro Manila and its surrounding provinces dominate the Philippines economically, politically, and culturally. Notwithstanding the 1992 decentralization, it is a quintessential primate city. Depending on which of the broader definitions of contiguous urban settlements is adopted,[11] its population in 2021 was at least 24 million people, while its economic output was at least 40 percent of national GDP. It is one of the world's most densely populated and congested cities, but comparatively not a high-rise city [Bird et al. forthcoming]. Air quality levels in Manila do not meet World Health Organization (WHO) advisory levels, even though other ASEAN cities reportedly have more severe air pollution [ADB 2026]. Although it is the country's major economic driver and job

[11] That is, the eight jurisdictions comprising the NCR and surrounding provinces. See demographia.com.

provider, the poor struggle to survive in it. According to one set of estimates, it is one of the world's most expensive cities, in which "quality flats" cost about 20 times the median household income, one of the highest in the world on this metric [*The Economist* 2026].

Like other major Southeast Asian cities, Manila's dominance is best understood as the interaction between a favorable geographic location and the political economy of governance in the independence era. History also matters. As Doeppers [1984] observes, the social, economic, and political evolution during the American colonial period resulted in an economy that "relied heavily on acting as a central node for imports and a bureaucratic hub, redistributing wealth from the provinces to Manila through government employment." Paul Krugman's [1992] *Geography and Trade* insights are also relevant: the incentives that built up during the Philippines prolonged import substitution era exerted a powerful centralizing bias as manufacturers sought access to the political and bureaucratic dispensers of rents. The partial transition toward export orientation might have been expected to lead to some industrial dispersal, especially depending on the location of export zones. However, the dynamic BPO sector has tended to cluster where the labor talent pool is concentrated and where telecommunications and power infrastructure are more reliable—primarily in Metro Manila and its surrounding areas, the country's main center of tertiary education.

Congestion and affordability reflect the complexities of urban planning in developing Asia's megacities. The prolonged economic and fiscal crisis of the late 20th century resulted in underinvestment in transport and related infrastructure, for which there are no simple solutions. One approach is high-speed transport connections that facilitate both mobility and decongestion. A case in point is the ambitious North South Commuter Railway (NSCR). These and other major infrastructure projects are presumably sound investments, providing rigorous cost benefit analysis is undertaken, bidding procedures are transparent and efficient, and land acquisition issues can be resolved quickly and equitably [Bird et al. forthcoming].

A radical approach to the comprehensive provision of public housing is another option. Here the obvious model is Singapore's Housing and Development Board (HDB). This is one of the world's great urban management success stories. Established in 1960, it houses almost 80 percent of Singapore's population. It features innovative financing and planning mechanisms, including a focus on equity with tailored capacity-to-pay arrangements and job-creation in the construction sector.[12] Obviously the HDB worked in part owing to Singapore's exceptionally tough and clean government.[13] Singapore is currently among the world's wealthiest nations, although this was not the case when the HDB program was first launched. According to the Maddison Project database, the current Philippine per capita GDP is similar to that of Singapore in the early 1970s.

[12] Former Prime Minister Lee [2026] provides a retrospective on this and other Singapore policy innovations.
[13] See http://www.hdb.gov.sg/.

The Philippines is highly vulnerable to climate change and natural disasters in general. Adaptation and mitigation strategies are, therefore, of paramount importance, notwithstanding the endemic corruption associated with the recent flood mitigation measures. Decarbonization is central to these strategies, one element of which is rapid electrification. However, for complex historical reasons, the Philippines has among the highest power prices in Asia, as reported for example in the annual Japan External Trade Organization (JETRO) business surveys.

Nevertheless, the Philippines is not without some advantages as it decarbonizes. For one thing, its CO_2 emissions are comparatively modest, reflecting its energy mix which historically includes hydro and geothermal [Ravago et al. 2018]. Moreover, thanks in large part to China's technological innovation and manufacturing prowess, the costs of solar power and batteries are falling dramatically. As a result, the cost of electric vehicles is falling rapidly in Southeast Asia both for automobiles and mass transit options [Kohpaiboon and Lee 2024]. It therefore makes sense for the government to aggressively support technological adoption and innovation across the board, from power generation and transmission to household and business adoption, using feed-in tariffs and other mechanisms. These measures will reduce Philippine energy intensity, contribute to cleaner air in the cities, and reduce the country's dependence on Middle Eastern and other oil suppliers. An additional advantage is that renewable energy production and distribution can be implemented on a decentralized basis and is therefore well suited to the Philippines archipelagic geography.[14,15]

Over time the Philippines should be able to avail itself of contingent international climate finance mechanisms (i.e., contingent on preservation of forest and marine resources and biodiversity). Nevertheless, resource transfers under these programs have fallen well short of the rhetoric.[16] The main driver of progress will always be domestic reform and technological innovation.

4. Summing up

Three main conclusions follow from this analysis.

First, to this outsider at least, and contrary to much gloomy public commentary, there is much to be positive about the Philippine economy. The country has achieved solid economic growth for most of the past three decades, with only one major interruption: the COVID-19 pandemic. Living standards have risen and the improvements have been somewhat broad-based. Head count poverty in particular

[14] Given the country's unhappy experience with nuclear power and the very long investment lead times, one might expect that this energy source is no longer an option. Nevertheless, The Philippine National Nuclear Energy Act (RA 12305) of 2025 indicates that it remains a live policy option.

[15] See World Bank [2022] for a useful summary of the climate change policy options and their likely costs.

[16] For example, the Indonesia-Norway US$1 billion REDD+ agreement was launched with much fanfare in 2010. However, it had mixed results and was later discontinued in 2021 despite useful lessons learned.

has been responsive to economic growth. On current projections, the Philippines will become a *de facto* G20 economy in the foreseeable future. Viewed from the 1980s, all these statements would have appeared to be wildly optimistic.

Second, the reasons for the economic revival are quite straightforward. Major policy reforms, of the type long advocated by the Philippine economics profession, have been enacted. More prudent macroeconomic policies have been introduced, especially in monetary policy where the reforms have been institutionalized. The economy has become more open, enabling Philippine talent to better exploit the country's comparative advantages. Notwithstanding recurring scandals, the political system has at least been able to deliver these major reforms.

Third, if indeed the Philippines is now basically a "five percent growth economy" (much like Indonesia it should be noted, and for broadly similar reasons), the major issue going forward is whether this growth momentum can be accelerated, and whether the benefits of growth can be more equitably distributed. What are some of the variables that assist in answering these questions? Putting aside a major environmental catastrophe, another pandemic, and other such events, at least four come to mind.

4.1. Are the current growth drivers sustainable?

Remittances and BPOs have been major drivers of Philippine economic growth. There are obvious threats to both— the rising global tide of anti-immigrant (and foreign worker) sentiment in the case of the former and related technological innovation for the latter.

Definitive predictions are inherently risky since so many factors are completely beyond the control of the Philippines. With that caveat, my sense is that global labor markets will continue to be relatively open for the sorts of skills that the Philippines offers. In particular, the rapid aging occurring in most rich countries will increase the demand for health and aged care professionals in which the Philippines is already a well-established provider (see Pritchett [2026] for a persuasive discussion of these issues). To be sure, there will be obstacles—the election of xenophobic political leaders, for example—which underlines the importance of Philippine labor attachés abroad to guard against abuse. These international labor market segments are also increasingly credentialed and skill-intensive and are, therefore, not generally open to unskilled workers. Labor exports may no longer be the poverty alleviation strategy they were once regarded as. Moreover, the Philippines is now beginning to age quite rapidly, and arguably these skills will be required at home, too.

The future of BPOs in the age of AI is even more difficult to predict, especially with respect to the extent to which it will be skill-augmenting versus labor-displacing. Technological change is always disruptive, but the fact remains that there will always be a hierarchy of skill intensities which create employment prospects. Robots have not displaced personal carers. The long-predicted automation that would eradicate labor-intensive sectors such as garments has not occurred. The Philippines is in the fortunate position that BPOs have taken deep root in the country, establishing a major global reputation. The key to future growth will be adaptation to rapid technological innovation and supply-side investments to equip Philippine workers with the requisite skills.

4.2. Can the concentration of political and economic power be diffused?

Dynastic political power and high levels of corporate concentration cannot be easily and quickly overturned. As the quotes above remind us, voter vigilance and activism are ultimately the only sure guarantors of democratic quality. In the case of economic concentration, elements of the standard economic toolkits are as relevant as ever. Trade liberalization acts as a constraint on monopoly power in tradable goods and services. The Philippine Competition Commission (PCC) is empowered to foster the development of competitive market structures, and its work is therefore critically important (see the essays in Part 5 of Hill, Ravago, and Roumasset [2022] for an early look at the work of the PCC). The indifferent rankings of the Philippines in various comparative business surveys serve as a reminder of the importance of ongoing regulatory reform, since a complex and opaque regulatory system invariably favors incumbents. The Philippine workforce needs to be better equipped with the skills required for the mid-21st century, especially including greater ease for small and medium-sized enterprise start-ups.

4.3. Could global economic and political volatility derail growth?

In the evolving field of geoeconomics, there is a range of potentially difficult scenarios. The Philippines currently has an acrimonious relationship with China, the dominant economic locomotive in East Asia, and this has implications for international trade and investment flows. The Trump tariff madness may persist, and even if it diminishes, industry policy has returned to the global center stage and with it rising commercial barriers. The WTO continues to be on life support. The Middle East may experience ongoing conflict and instability. An era of global stagflation may be on the horizon. The principal safeguard response is to ensure that one's own house is in order. That means having fiscal and monetary policy buffers to smooth economic shocks, to protect vulnerable groups affected by these various shocks (environmental, health, and economic), and a flexible, diversified set of economic relationships. The Philippines is well equipped to handle some of these challenges, such as through its monetary policy settings, but much less so in others, as was clearly evident in its management of the COVID-19 pandemic. Membership in ASEAN, the most durable and influential grouping in the developing world, is an important advantage. Inevitably, the Philippines is largely a bystander in the global industry policy debates. As always, the challenge is to strengthen supply-side competitiveness, equip Philippine businesses and workers to manage diversity, and ensure policy makers keep in mind the country's earlier unhappy history with industry policy.

4.4. How can growth be more inclusive?

Perhaps this is the most intractable challenge facing the Philippines, but it is at least the one where the extensive research to date provides clear policy pathways. Reform arguably commences with the education system, which performs poorly on both quality (except at the upper end) and inclusivity. The labor market, the ladder of economic progress, needs to provide more and better jobs, principally through stronger productivity growth rather than more labor market regulations. Greater economic openness would provide more and better jobs for Philippine workers. The conditional cash transfer program needs to be strengthened, and the complementary conditional inputs of education and health services improved. A regional development strategy needs to be fashioned with a focus on lagging regions, particularly in conflict-affected regions such as Mindanao [Hutchcroft 2016], and with fiscal transfers to poorer regions that incentivize improved governance. There are few, if any, quick wins in these deeply complex areas of public policy, but as with the examples of policy success alluded to above, the essential prerequisite is policy-oriented reform and advocacy.

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Does gender stereotyping influence labor force participation in the Philippines?

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We implement a partially linearized Blinder-Oaxaca decomposition to analyze the labor force participation gap. Using data from the merged January 2024 Labor Force Survey and the 2023 Family Income and Expenditure Survey, findings show that over 90 percent of the participation gap arises from the unexplained component which is linked to gender stereotyping. Proxies for the stereotype that men are primary economic providers—such as educational attainment and potential experience—are significant contributors to the unexplained portion, especially for married individuals, but are inconsistent for single individuals. On the other hand, domestic responsibility proxies, such as the nuclear family structure and the presence of children, show negligible or no contributions, indicating that stereotypes assigning household chores and childcare to women do not significantly influence the participation gap. These findings demonstrate that only the stereotype of men as primary economic providers significantly affects the labor participation gap, which is more evident among married individuals and less so among single individuals.

JEL classification: J70, J01
Keywords: Blinder-Oaxaca decomposition, participation gap, gender, stereotyping

1. Introduction

Labor force participation among women in the Philippines remains significantly lower than that of men. Despite progress in narrowing the participation gap, the disparity still exceeds 20 percentage points (pp) relative to its 2016 level.

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This disparity could indicate gender stereotyping, as women are expected to prioritize household responsibilities while men are expected to act as primary economic providers [Cabegin and Gaddi 2019].

To understand this disparity, researchers have employed various approaches. Some studies have applied a separate binary regression and compared the results between genders (Cabegin and Gaddi [2019]; Epetia [2019]), while others have focused solely on female participation [Pacete 2020]. However, a comprehensive approach is to decompose the participation gap into explained and unexplained components.

The Blinder-Oaxaca decomposition method, developed independently by Blinder [1973] and Oaxaca [1973], was originally applied to wage differentials. Oaxaca [1973] posited that in the absence of discrimination, the unexplained component would be zero. If non-zero, this may be attributed to discrimination, biases, or other factors [Elder et al. 2009]. Applying this method to labor participation can quantify the extent to which gender stereotypes affect decisions on labor market entry.

Despite several studies on labor force participation in the Philippines, the Blinder-Oaxaca decomposition method has not been utilized. The major challenge limiting its use is that linear regression is not well-suited to binary outcomes such as labor force participation, as decomposed estimates may not tally with the total labor force participation gap.

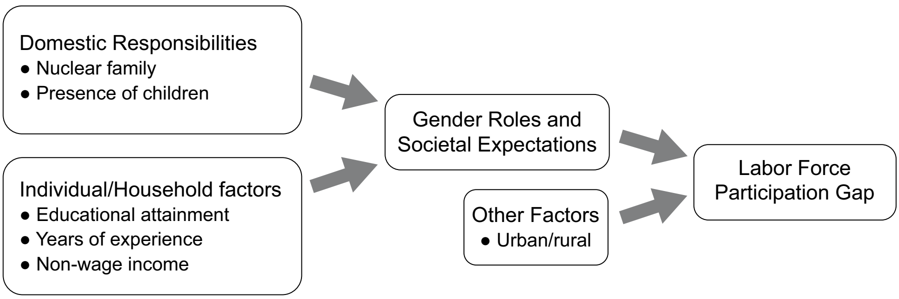
To address this problem, two methodologies have been put forward: the non-linear approach [Fairlie 2005] and the partially linearized approach (Even and Macpherson [1990]; Yun [2004]). The non-linear approach has available software implementation, but the main drawback is that the decomposition result is not robust to the ordering of the independent variables [Fairlie 2005]. On the other hand, the partially linearized approach has no readily available implementation, but the contributions of the independent variables to the participation gap are robust to ordering.

This study aims to quantify the source of the labor force participation gap using the Blinder-Oaxaca decomposition. Specifically, it examines which percentage points in labor participation are due to the explained gap (i.e., differences in averages) and to the unexplained gap (i.e., differences in coefficients). If gender stereotyping plays a significant role, a substantial portion of the participation gap is expected to be due to the unexplained gap.

Three gender stereotypes that may contribute to the unexplained portion of the participation gap are examined. First, the assignment of household chores to women is proxied by household structure, specifically whether the household is nuclear as opposed to extended, where such tasks may be distributed among other members. Second, the assignment of childcare to women is proxied by the presence of children in the household [Epetia 2019]. The first and second stereotypes are grouped into domestic responsibilities in subsequent discussions (see Figure 1).

Third, the assignment of the economic provider role to men is proxied by educational attainment, years of experience, and non-wage income. If these stereotypes hold, the proxy indicators should contribute positively to the unexplained component of the participation gap (see Figure 1). Conversely, if the contribution of these indicators is zero or negative, the data do not support the presence of such gender stereotypes.

FIGURE 1. Gender stereotypes and the participation gap



The next sections are arranged as follows: the second section examines the Blinder-Oaxaca decomposition and its probit extension; the third section provides an overview of the data source and variable descriptions; the fourth section presents the results and their implications; and the final section offers a summary and conclusion.

2. Blinder-Oaxaca decomposition

The Blinder-Oaxaca decomposition technique separates the average difference in the outcome variable Y between the two groups, say male (M) and female (F), into explained and unexplained components. This is formally given as:

$$\bar{Y}_M - \bar{Y}_F = (\bar{X}_M - \bar{X}_F)\beta_M - \bar{X}_F\,(\beta_M - \beta_F) \qquad (1)$$

where $\bar{Y}_j$ is the average outcome of gender $j = M, F$; $\bar{X}_j$ is the vector averages of independent variables (observable characteristics); and β_j is the vector of estimated coefficients (returns to the characteristics).

For the outcome variable labor force participation, the left-hand side is the participation gap. The first term on the right-hand side, $(\bar{X}_M - \bar{X}_F)\beta_M$, captures the explained gap, which mainly arises from the average differences of the independent variables between the two groups $(\bar{X}_M - \bar{X}_F)$. For example, if the average educational attainment of males is higher, $(\bar{X}_M - \bar{X}_F > 0)$, then this contributes to the explained gap adjusted by the coefficient β_M.

The second term, $\bar{X}_F(\beta_M - \beta_F)$, accounts for the unexplained gap, which mainly stems from the differences in coefficients, $(\beta_M - \beta_F)$, rather than differences in averages. If the coefficients for males and females differ such that $(\beta_M - \beta_F) > 0$, this contributes to the participation gap. In this study, this could be attributed to gender stereotypes as shown in Figure 1. In the case where the difference in coefficients is negative, $(\beta_M - \beta_F) < 0$, the independent variable does not contribute to or even minimizes the participation gap. This means that the data does not support a particular gender stereotype.

Given that labor participation is a binary variable, Equation (1) cannot be used directly for decomposition. The alternative approaches are non-linear and partially linearized decomposition. Of the two approaches discussed in the previous section, this paper uses the partially linearized approach, as it is robust to the ordering of variables. Following Yun [2004], Equation (1) above is estimated using probit regression and decomposed via a partially linearized technique. Let Φ be a probit function, i represents the independent variable, and "over bar" represents the sample's average. The detailed decomposition is shown as follows:

$$\bar{Y}_M - \bar{Y}_F = \sum_{i=1}^{i=K} W^i_{\Delta X}\,[\overline{\Phi(X_M\beta_M)} - \overline{\Phi(X_F\beta_M)}] + \sum_{i=1}^{i=K} W^i_{\Delta\beta}[\overline{\Phi(X_F\beta_M)} - \overline{\Phi(X_F\beta_F)}], \qquad (2)$$

where:

$$W^i_{\Delta X} = (\bar{X}^i_M - \bar{X}^i_F\,)\beta^i_M \,/\, (\bar{X}_M - \bar{X}_F)\beta_M,$$

$$W^i_{\Delta\beta} = \bar{X}^i_F(\beta^i_M - \beta^i_F\,) \,/\, \bar{X}_F\,(\beta_M - \beta_F), \text{ and } \sum_{i=1}^{i=K} W^i_{\Delta X} = \sum_{i=1}^{i=K} W^i_{\Delta\beta} = 1.$$

Since no readily available implementation exists, Equation (2) is implemented using R software. Standard errors and statistical significance of coefficients are computed through bootstrapping.

3. Data description

This study utilizes a merged dataset of the January 2024 Labor Force Survey (LFS) and the 2023 Family Income and Expenditure Survey (FIES), both conducted by the Philippine Statistics Authority (PSA). These surveys interviewed approximately 163,000 sample households and are publicly accessible through the PSA Data Archive (PSADA).

The focus of this study is on individuals between 25 and 59 years old, as they represent the most active segment of the labor market, having completed formal schooling and not yet reaching retirement age. The analysis is restricted to married and single individuals, excluding other marital statuses for tractability, given that this portion is small, at around eight percent.

TABLE 1. Description of sample working population, aged 25 to 59

	Single		Married	
	Female	**Male**	**Female**	**Male**
Total Sample	19,615	31,043	89,197	84,615
Participation rate (percent)	78.8	85.2	60.8	95.0
Participation gap (pp)	6.04		34.23	
Nonwage income[1], mean	47,590	43,070	35,809	32,562
Potential experience, mean	15.4	17.4	24.4	26.4
Age, mean	33.5	33.8	40.7	41.8
Dummy Variables[2]				
Nuclear family	9,077 (46.3%)	16,932 (54.5%)	59,513 (66.7%)	57,517 (68.0%)
Presence of children aged 0-5	3,659 (18.7%)	4,771 (15.4%)	35,138 (39.4%)	34,785 (41.1%)
Presence of children aged 6-14	6,369 (32.5%)	8,682 (28.0%)	54,518 (61.1%)	51,619 (61.0%)
Urban dummy	12,140 (61.9%)	16,906 (54.5%)	44,265 (49.6%)	41,325 (48.8%)
Below elementary	1,220 (6.2%)	4,757 (15.3%)	10,936 (12.3%)	17,382 (20.5%)
Elementary level	732 (3.7%)	3,919 (12.6%)	9,584 (10.7%)	15,859 (18.7%)
High school undergraduate	913 (4.7%)	3,574 (11.5%)	12,605 (14.1%)	12,796 (15.1%)
High school graduate	4,550 (23.2%)	9,544 (30.7%)	34,207 (38.3%)	31,032 (36.7%)
College undergraduate/vocational	82 (0.4%)	230 (0.7%)	124 (0.1%)	105 (0.1%)
College graduate and above	12,850 (65.5%)	12,938 (41.7%)	31,325 (35.1%)	23,300 (27.5%)

Note 1-2: Non-wage income is in pesos per capita terms, computed from total income minus wage income; potential experience in years, computed as age minus years in schooling minus childhood years. As for dummy variables, the first row is the number of observations, while the values in parentheses (second row) are percentages relative to the total sample within gender.
Source: Subset of merged LFS 2024 January and FIES 2023. Philippine Statistics Authority.

The dataset descriptions include counts, percentages, and means for relevant variables as shown in Table 1. Some independent variables are derived from the original data. For example, the presence of non-wage income, expressed per capita, is included because prior research has shown that it reduces labor force participation [Cabegin 2006]. The potential experience variable, used as a proxy for work experience, is computed as age minus years of schooling minus childhood years. This proxy variable may not accurately reflect experience [Miller 1993], but it is still included for its potential to predict labor participation.

Other independent variables are indicators for domestic responsibilities. For example, a dummy for nuclear households is included as a proxy indicator for household responsibilities, as these households generally lack extended family members for support. The presence of children is also an indicator of childcare responsibilities that may affect labor force participation [Epetia 2019].

Educational attainment is captured through five education dummy variables, with "below elementary education" serving as the reference category in probit regression. Past studies indicate that higher levels of education tend to increase labor force participation [Pacete 2020].

4. Results and discussion

This section examines the Blinder-Oaxaca decomposition estimates in which the coefficient values for the explained and unexplained components represent their respective contributions to the total participation gap, as shown in Table 2.

4.1. Gap components

The results show that the participation gap is substantial for the married working population, at 34.2 pp, which is five times larger than for the single working population at 6.4 pp. Notably, less than ten percent of the gap for both groups can be attributed to the explained component due to differences in observable characteristics between genders. This means that more than 90 percent of the gaps are due mainly to unexplained component, likely influenced by gender stereotyping, which is discussed further below.

4.1.1. Domestic responsibilities

One gender stereotype, as proxied by the nuclear family, is the assumption that women are primarily responsible for household chores. For single women, this is not statistically significant, whereas for married women, its contribution to the participation gap is small and negative. This indicates that this gender stereotype does not meaningfully contribute to the labor force participation gap for both marital statuses.

Another gender stereotype that may also influence labor participation is the expectation that women prioritize taking care of children over employment. The results show that the presence of children in the household, whether younger or older, has a negative contribution to the participation gap, regardless of marital status. This suggests that this second gender stereotype does not contribute to the labor participation gap.

TABLE 2. Partially linearized Oaxaca-Blinder decomposition of labor force participation between genders by marital status

Dependent variable: Difference in labor participation between genders				
	Single		**Married**	
Participation gap	0.0645		0.3423	
	Explained Gap	**Unexplained Gap**	**Explained Gap**	**Unexplained Gap**
	0.0057***	0.0588***	0.0013***	0.3410***
	(0.0013)	(0.0036)	(0.0002)	(0.0018)
	Contribution to Gap			
Proxy for domestic responsibilities				
Nuclear family	0.0002 (0.0003)	-0.0020 (0.0016)	0.0003*** (0.0001)	-0.0643*** (0.0079)
Ages 0-5 dummy	0.0003. (0.0002)	-0.0023* (0.0009)	0.0001* (0.0000<)	-0.0465*** (0.0054)
Ages 6-14 dummy	0.0005* (0.0002)	-0.0024* (0.0012)	0.0000<*** (0.0000<)	-0.0311*** (0.0047)
Education (base reference, below elementary)				
Elementary level	0.0210*** (0.0026)	-0.0005 (0.0004)	-0.0029** (0.0009)	0.0100*** (0.0023)
High school undergraduate	0.0177*** (0.0021)	0.0001 (0.0004)	-0.0006*** (0.0001)	0.0248*** (0.0023)
High school graduate	0.0197*** (0.0024)	0.0064*** (0.0013)	0.0012*** (0.0002)	0.0805*** (0.0051)
College undergraduate	0.0006*** (0.0001)	0.0001. (0.0001)	0.0000<*** (0.0000<)	0.0005*** (0.0001)
College graduate and above	-0.0529*** (0.0065)	0.0461*** (0.0047)	0.0079*** (0.0013)	0.1511*** (0.0059)
Other indicators				
Potential experience	-0.0017*** (0.0005)	0.0003 (0.0026)	-0.0048*** (0.0008)	0.2065*** (0.0167)
Nonwage income	0.0003* (0.0002)	0.0004 (0.0011)	0.0001* (0.0000<)	0.0066** (0.002)
Urban dummy	0.0000< (0.0003)	0.0125** (0.0028)	0.0001*** (0.0000<)	0.0031 (0.0029)

Note: Significance codes: '***' 0.001, '**' 0.01, '*' 0.05 and '.' 0.10; bootstrapped standard errors (SEs) in parentheses.

4.1.2. The economic provider role

The third gender stereotype that may contribute to the gap in labor force participation is the expectation that men are the economic providers. Among married men, the results indicate that educational attainment at all levels contributes positively to the unexplained component of the participation gap. For singles, however, this contribution is concentrated among those with higher educational attainment. This suggests that this stereotype is more pronounced among married men and relatively weaker among single men.

It is important to note that being a college graduate is the largest contributor to the unexplained component of the participation gap for the single working population and the second largest for the married working population. However, the greater number of single female college graduates (66 percent in Table 1) contributes to narrowing the explained component of the participation gap, offsetting part of the disparity. This may explain why the participation gap is smaller for the single working population.

Additional proxies for the economic provider role stereotype were also examined. Potential experience among the married working population is significant and the biggest contributor to the unexplained component of the participation gap. However, it has no significant effect on the single working population. Non-wage income contributes to the unexplained gap for married individuals but not for singles. These findings suggest that the expectation of men as economic providers is strongly reflected among married men in potential experience and non-wage income, like educational attainment.

4.2. Other indicators

Location has a significant but small contribution to the participation gap in the single working population but is not a contributing factor in the married working population. The pattern suggests that the effect of urban location may not be tied to gender stereotypes as expected in the framework.

5. Summary and conclusion

In summary, the Blinder-Oaxaca decomposition results show that the labor force participation gap is five times larger among married individuals compared to singles. More than 90 percent of the gap is attributed to the unexplained component, which is likely linked to gender stereotyping.

Domestic responsibility proxies, such as nuclear family structure and the presence of children, do not significantly contribute to the unexplained part of the participation gap. Their coefficients are either small or negative, suggesting that the data do not support stereotypes assigning household chores and childcare to women.

Educational attainment emerges as a strong contributor to the unexplained gap, particularly among married men, reinforcing the stereotype of men as economic providers. For single men, this effect is concentrated among those with higher levels of education, indicating a weaker but still present stereotype. Interestingly, the relatively high proportion of single female college graduates contributes to narrowing the participation gap, which helps explain the smaller disparity among singles.

Potential experience and non-wage income also contribute to the unexplained participation gap, but only for married men, indicating that the economic provider stereotype is significant among them.

In conclusion, the findings demonstrate that the labor force participation gap is substantially composed of an unexplained gap. This is linked to gender stereotyping around the economic provider role, particularly among married men. Conversely, stereotypes related to domestic responsibilities do not appear to affect the labor participation gap.

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