MONETARY POLICY REPORT

FEBRUARY 2025

Foreword

The primary objective of monetary policy is to promote low and stable inflation leading to balanced and sustainable economic growth and employment. To help fulfill this objective, the Bangko Sentral ng Pilipinas (BSP) adopted the inflation targeting framework for monetary policy in January 2002.

One of the key features of inflation targeting is greater transparency. This means greater disclosure and communication by the BSP of its policy actions and decisions. The *Monetary Policy Report* plays a primary part in the BSP's efforts in ensuring transparency. The *Monetary Policy Report* shares with stakeholders, including market participants, the BSP's latest assessment of the monetary policy stance based on an analysis of economic and financial prospects. The broad aim is to make the inner workings of monetary policy more accessible to the public. Through the *Monetary Policy Report*, the public may better understand and monitor the BSP's commitment to the inflation target.

The *Monetary Policy Report* is the flagship BSP publication on monetary policy. It provides the public with a detailed view of the BSP's forecasts and guidance on the likely direction of monetary policy over the next two years. The report presents the rationale behind the BSP's monetary policy decisions. The majority of the report focuses on forward-looking analyses of inflation and key macroeconomic variables affecting inflation. The report also includes an examination of risks and uncertainties surrounding the BSP's inflation forecasts.

Under the inflation targeting framework, the Development Budget Coordination Committee (DBCC) has retained the government's annual headline inflation target at 3.0 percent ± 1.0 percentage point (ppt) for 2024–2028. The inflation target range continues to be our quantitative representation of the medium-term goal of price stability, consistent with the current structure of the Philippine economy and the outlook for macroeconomic conditions over the next two years.

The Monetary Board approved this *Monetary Policy Report* at its meeting on 13 February 2025.

ELI M. REMOLONA, JR.
Governor

The Monetary Policy of the Bangko Sentral ng Pilipinas

The BSP mandate

The main responsibility of the BSP is to formulate and implement policy in the areas of money, banking, and credit, with the primary objective of maintaining stable prices conducive to balanced and sustainable economic growth and employment in the Philippines. The BSP also aims to promote and preserve monetary stability and the convertibility of the national currency.

Monetary policy instruments

The BSP implements monetary policy by setting the target reverse repurchase (RRP) rate. The BSP then conducts liquidity management operations through the ON RRP facility, term deposit facility and BSP Securities Facility to ensure that the overnight RRP rate is close to the target RRP rate.

Policy target

The BSP's target for monetary policy is the headline inflation which is the average annual inflation rate based on the Consumer Price Index (CPI) compiled and released to the public by the Philippine Statistics Authority (PSA). The policy target is set by the DBCC in consultation with the BSP.[1] The inflation target for 2024–2028 is 3.0 percent ± 1.0 ppt.[2]

The BSP's explanation clauses

Explanation clauses are a prespecified set of acceptable circumstances under which an inflation-targeting central bank may fail to achieve its inflation target. These clauses reflect the fact that there are limits to the effectiveness of monetary policy and that deviations from the inflation target may sometimes occur because of factors beyond the control of the central bank. Under the inflation targeting framework of the BSP, these exemptions include inflation pressures arising from (a) volatility in the prices of agricultural products; (b) natural calamities or events that affect a major part of the economy; (c) volatility in the prices of oil products; and (d) significant government policy changes that directly affect prices, such as changes in the tax structure, government incentives, and subsidies.

[1] The DBCC, created under Executive Order (EO) No. 232 dated 14 May 1970, is an interagency committee tasked primarily to formulate the national government (NG)'s fiscal program. It is composed of the Office of the President, the Department of Budget and Management (DBM), the National Economic and Development Authority (NEDA), and the Department of Finance. The BSP attends the Committee meetings as a resource agency.

[2] During the meeting on 15 December 2023, the DBCC, in consultation with the BSP, decided to retain the inflation target of 3.0 percent ± 1.0 ppt for 2024 and set the same inflation target for 2025–2028.

The Monetary Board

The powers and functions of the BSP, such as the conduct of monetary policy and supervision over the banking system, are exercised by its Monetary Board (MB). It has seven members appointed by the President of the Philippines. For 2024, the MB held seven monetary policy meetings to review and decide on monetary policy.

Chairman and Governor

Eli M. Remolona, Jr.

Members

Ralph G. Recto
Benjamin E. Diokno
Romeo L. Bernardo
Rosalia V. De Leon
Walter C. Wassmer
Jose L. Querubin

The Advisory Committee

The Advisory Committee was established as an integral part of the institutional setting for inflation targeting. It is tasked to deliberate, discuss, and make recommendations on monetary policy to the Board. Like the MB, the Committee met seven times in 2024.

Chairman

Eli M. Remolona, Jr.
Governor

Members

Francisco G. Dakila, Jr.
Deputy Governor
Monetary and Economics Sector

Chuchi G. Fonacier
Deputy Governor
Financial Supervision Sector

Elmore O. Capule
Deputy Governor
Corporate Services Sector

Edna C. Villa
Senior Assistant Governor
Financial Markets

Zeno Ronald R. Abenoja
Assistant Governor
Monetary Policy Sub-Sector

Benjamin E. Radoc, Jr.
Officer-in-Charge
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Economic and Financial Forecasting Group

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Deputy Director
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Sol Elizah T. Roxas
Bank Officer VI
Corporate Services Sector

Technical support staff members

Monetary Policy Research Group
Economic and Financial Forecasting Group
Financial Markets Research Group
Real and External Sectors Research Group

Schedule of Monetary Policy Meetings and publication of the Monetary Board Highlights and the Monetary Policy Report for 2025

Month	Monetary Board Meeting	Monetary Board Highlights	Monetary Policy Report
January			3 (Friday) (MPR IV, December 2024)
February	13 (Thursday) (MB meeting no. 1)		28 (Friday) (MPR I, February 2025)
March			
April	3 (Thursday) (MB meeting no. 2)		
May		8 (Thursday) (3 April 2025 MB meeting)	
June	19 (Thursday) (MB meeting no. 3)		
July			4 (Friday) (MPR II, June 2025)
August	28 (Thursday) (MB meeting no. 4)		
September			12 (Friday) (MPR III, August 2025)
October	9 (Thursday) (MB meeting no. 5)		
November		6 (Thursday) (9 October 2025 MB meeting)	
December	11 (Thursday) (MB meeting no. 6)		26 (Friday) (MPR IV, December 2025)

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List of Acronyms and Abbreviations

AE	advanced economy
AFF	agriculture, forestry, and fishing
AONCR	areas outside the National Capital Region
AR	autoregressive
ASF	African Swine Fever
BMI	Business Monitoring International
bp/bps	basis point/basis points
BSEF	Bangko Sentral ng Pilipinas' survey of external forecasters
BSP	Bangko Sentral ng Pilipinas
BSPB	Bangko Sentral ng Pilipinas bill
BTr	Bureau of the Treasury
CPI	Consumer Price Index
DA	Department of Agriculture
DBCC	Development Budget Coordination Committee
DBM	Department of Budget and Management
DI	diffusion index
DOF	Department of Finance
DOTr	Department of Transportation
DPWH	Department of Public Works and Highways
EA	emerging Asia
EMDE	emerging market and developing economy
EO	Executive Order
ERC	Energy Regulatory Commission
FAO	Food and Agriculture Organization
FDI	foreign direct investment
GDP	gross domestic product
GIR	gross international reserves
GPMN	Global Projection Model Network
GS	government security
IMF	International Monetary Fund
IT	inflation targeting
LTFRB	Land Transportation Franchising and Regulatory Board
MB	Monetary Board
Meralco	Manila Electric Company
MISSI	Monthly Integrated Survey of Selected Industries
m-o-m	month-on-month
MPR	Monetary Policy Report
MRT	Metro Rail Transit
NAIA	Ninoy Aquino International Airport
NCR	National Capital Region
NEDA	National Economic and Development Authority
NEER	nominal effective exchange rate
NG	national government
NG	national government
ODF	overnight deposit facility
OPEC	Organization of the Petroleum Exporting Countries
PAMPh	Policy Analysis Model for the Philippines
PMI	purchasing managers' index

ppt	percentage point
PSA	Philippine Statistics Authority
PSEi	Philippine Stock Exchange Index
RA	Republic Act
REER	real effective exchange rate
RM	reserve money
RRP	reverse repurchase
RRR	reserve requirement ratio
SC	Supreme Court
T-bill	Treasury bill
T-bond	Treasury bond
TDF	term deposit facility
TPI	Trading Partners Index
UAE	United Arab Emirates
U/KB	universal and commercial bank
US	United States
US Fed	United States Federal Reserve
VaPI	value of production index
VAR	vector autoregression
VoPI	volume of production index
WAIR	weighted average interest rate
WEO	World Economic Outlook
WESM	Wholesale Electricity Spot Market
w-o-w	week-on-week
y-o-y	year-on-year

Monetary policy summary

The Monetary Board (MB) maintained the target reverse repurchase (RRP) rate at 5.75 percent at its monetary policy meeting on 13 February 2025. Correspondingly, the interest rates on the overnight deposit and lending facilities were maintained at 5.25 percent and 6.25 percent, respectively.

The MB projects inflation to remain within the target range over the policy horizon. The baseline forecasts for both 2025 and 2026 are at 3.5 percent. Disinflation towards the midpoint of the target range is anticipated in the first half of 2025. This is supported by the expected decline in rice prices stemming from tariff reductions. However, inflation is projected to briefly exceed the upper bound of the target range in late 2025 before gradually returning to the midpoint in 2026.

The risks to the inflation outlook have become broadly balanced:
Upside Risks:
- Upward adjustments in electricity rates
- Higher transport charges
- Elevated pork prices

Downside Risks:
- Potential spillover effects on domestic rice prices from lower import tariffs

Should these risks materialize, average inflation could settle at 3.5 percent in 2025 and 3.7 percent in 2026.

Inflation expectations remain well-anchored. The February 2025 BSP Survey of External Forecasters (BSEF) indicates that analysts anticipate within-target inflation from 2025 to 2027. The risks are perceived as broadly balanced, with headline inflation expected to remain low and manageable over the medium term.

The outlook for domestic growth remains to be firm, albeit with some moderation. GDP growth is expected to settle near the lower bound of the government's target, reflecting lower-than-expected Q4 2024 GDP outturn and increase in oil prices. However, these are partly offset by lower real interest rates, resulting from the recent policy rate cut and higher inflation projections. Uncertainties surrounding global economic policies, particularly the impact of potential US tariffs, pose additional downside risks to domestic growth.

Given the assessment of the risks to the inflation and growth outlook, the MB decided to maintain the current monetary policy settings. The Board deems it prudent to await further assessments of the impact of global policy uncertainty and their potential effects before deciding on further policy rate adjustments.

Looking ahead, the BSP anticipates a continued measured transition towards less restrictive monetary policy settings, while allowing previous policy adjustments to continue working their way through the economy.

A. Economic outlook

I. Baseline forecasts

Inflation is projected to settle within the 2.0-4.0 percent target range over 2025-2026. The anticipated decline in rice prices from tariff reductions is expected to help guide inflation towards the midpoint of the target range in the first half of 2025.

However, inflation could exceed the target range in the latter part of 2025, primarily due to base effects from easing commodity price pressures in the corresponding period of 2024. Inflation is then projected to move closer to the midpoint of the target range in 2026, supported by an expected moderation in global commodity prices.

The inflation outlook for 2025 has been revised upward, reflecting higher global oil and non-oil prices, peso depreciation, and recent above-expectation inflation readings in December 2024 and January 2025. The 2026 forecast is broadly unchanged.

Table 1
Higher baseline inflation forecast for 2025 but still within the target range
Baseline projections, in percent

	December 2024 Monetary Policy Report[a]	February 2025 Monetary Policy Report[b]
2025	3.3	3.5
2026	3.5	3.5

Source: Bangko Sentral ng Pilipinas estimates
[a] Baseline forecasts from the 19 December 2024 monetary policy meeting.
[b] Baseline forecasts from the 13 February 2025 monetary policy meeting.

The outlook for domestic economic activity remains firm, though growth is anticipated to moderate compared to previous assessments. Real GDP growth is projected to settle near the lower bound of the Development Budget Coordination Committee's (DBCC) 6.0-8.0 percent target range for 2025 and 2026.[3] This moderation reflects:

- The lower-than-expected Q4 2024 growth outturn, driven by a slowdown in services and contraction in agriculture; and
- Higher global commodity prices, which are expected to dampen economic activity.

These headwinds are partially offset by the BSP's monetary policy easing. Nonetheless, uncertainty surrounding global economic policies, particularly the potential impact from proposed US tariffs, pose additional risks to domestic growth.

[3] Based on the Development Budget Coordination Committee meeting on 2 December 2024

The overall balance of demand and supply conditions translates to a neutral output gap, suggesting limited demand-driven inflationary pressures. Key factors include:

- Slower consumption growth, with the usual holiday season demand surge restrained by Q4 2024 typhoons
- Weaker investment demand amid subdued global economic activity and geopolitical tensions
- Continued improvements in the domestic labor market, characterized by a stable employment rate and improving job quality

The exchange rate is projected to settle above the DBCC's assumptions for 2025 and 2026,[4] influenced by a slower pace of monetary policy easing by the US Federal Reserve (US Fed) and recent exchange rate movements. The baseline forecasts incorporate market expectations of a 50-basis point reduction in the US federal funds rate in 2025, followed by a further 25-basis point cut in 2026.

II. Key forecast assumptions

External factors

Global economic outlook. The global economy is expected to experience modest but stable growth, according to the January 2025 Global Projections Model Network (GPMN) forecasts and the International Monetary Fund's (IMF) World Economic Outlook (WEO) Update.

In the United States, emerging policies such as higher tariffs, lower domestic taxes, and expansionary fiscal measures could have far-reaching effects on both the US and major economies in 2025 and beyond. The US economy faces upside risks, while other economies confront downside risks amidst elevated policy uncertainty and various challenges.

The euro area is anticipated to see gradual improvement in growth, though progress remains constrained by low consumer sentiment and ongoing geopolitical tensions. Other advanced economies may benefit from recovering real incomes bolstering consumption, but trade restrictions could keep investment subdued.

Growth prospects in the Middle East and Central Asia may fall short of expectations, primarily due to the extension of OPEC+ production cuts.

[4] The DBCC exchange rate assumptions as of 2 December 2024 are ₱57.00–₱57.50/US$1 for 2024, ₱56.00–₱58.00/US$1 for 2025, and ₱55.00–₱58.00/US$1 for 2026.

Table 2
World GDP growth is seen to remain stable but modest
In percent

	December 2024 Monetary Policy Report	February 2025 Monetary Policy Report
2025	2.9	2.9
2026	2.8	2.7

Sources: Global Projection Model Network (GPMN) (November 2024 and January 2025); World Economic Outlook Update (IMF, January 2025)

International crude oil prices. Global crude oil prices are projected based on oil futures market data from 21 January 21 to 3 February 2025, with domestic oil market prices expected to broadly track the trend in world oil prices. The crude oil path is influenced by stricter US sanctions on Russian oil producers, which have disrupted oil supply to China and India. Additionally, cold weather has driven up winter fuel demand. Despite these upward pressures, the market is still expected to exhibit backwardation, reflecting prospects of subdued global demand and continued over-supply.

Table 3
Global oil prices are assumed to decelerate
Average Dubai crude oil price assumptions, in US$ per barrel

	December 2024 Monetary Policy Report	February 2025 Monetary Policy Report
2025	70.05	76.75
2026	68.15	72.20

Sources: Bloomberg; Bangko Sentral ng Pilipinas estimates

If Dubai crude oil prices were to average US$100.0 per barrel in 2025 and US$85.0 per barrel in 2026, inflation could breach the 2.0–4.0 percent target range, considering only direct effects and not potential second-round impacts.

Table 4

Inflation could exceed the target if crude oil prices average above US$100 per barrel in 2025

Impact of alternative Dubai crude oil price scenarios on inflation, in percentage points

Year	2025	2026
Baseline inflation forecast (US$)	3.5	3.5
75	3.5	3.7
80	3.6	3.9
85	3.8	4.2
90	3.9	4.4
95	4.0	4.6
100	4.1	4.8

Source: Bangko Sentral ng Pilipinas estimates

The scenarios assume oil prices will remain at these levels starting March 2025.

World non-oil prices. The IMF's January 2025 WEO Update indicates an expected increase in non-fuel commodity prices for 2025, marking a significant upward revision from previous forecasts. This projection is largely attributed to the recent uptick in prices of several agricultural commodities due to adverse weather conditions in key exporting countries.

Table 5

Non-oil prices are expected to rise on higher agricultural commodity prices

World non-oil prices, in percent

	December 2024 Monetary Policy Report	February 2025 Monetary Policy Report
2025	-0.2	2.5
2026	0.4	-0.1

Sources: WEO (IMF, October 2024), WEO Update (IMF, January 2025)

US federal funds rate assumptions. The baseline forecast incorporates a higher interest rate path for the United States, following the Fed's decision in January 2025 to maintain the federal funds rate and expectations of a slower pace of US monetary policy easing. Based on futures prices as of 3 February 2025, market expectations align with a cumulative 50-bp cut in 2025 and a further 25-bp reduction in 2026.

Table 6
Projections for federal funds rate have been revised upwards
End-period; in percent

	December 2024 Monetary Policy Report	February 2025 Monetary Policy Report
2025	3.7	3.9
2026	3.4	3.7

Source: Bloomberg

Domestic factors

Target RRP rate and the RRR. The target reverse repurchase (RRP) rate is set at 5.75 percent and the reserve requirement ratio (RRR) at 7.0 percent from February 2025 through the end of 2026. The projection assumes no further adjustments to either the policy interest rate or the RRR over the forecast horizon.

Wages. The baseline forecasts incorporate minimum wage increases of 5.0 percent for both 2025 and 2026. These projections are consistent with historical minimum wage adjustments observed from 2015 to 2024.

Fiscal program. The inflation outlook aligns with the government's fiscal deficit assumptions as outlined in the medium-term fiscal program set by the DBCC on 2 December 2024.

Table 7
Fiscal deficit assumptions are unchanged
in percent

	December 2024 Monetary Policy Report	February 2025 Monetary Policy Report
2025	5.3	5.3
2026	4.7	4.7

Source: Department of Budget and Management

Tax adjustments. The baseline forecasts also account for legislated tax adjustments, including annual increases in excise taxes on alcoholic beverages and cigarettes under Republic Act No. 11467, as well as further increases in tobacco product taxes as mandated by Republic Act No. 11346.

Utilities. Utility rate adjustments are incorporated into the baseline forecasts. These include approved water rate increases for Manila Water Company and Maynilad Water Services, as well as higher electricity rates for areas serviced by the Manila Electric Company (Meralco) to recover costs over a 12-month period beginning with the October 2024 billing cycle. The forecasts also factor in the collection of the remaining 70.0 percent of total reserve market transactions incurred during the March 2024 supply period, starting in January 2025.

Lower tariff on rice imports.[5] The recent reduction in tariffs on rice imports is expected to have a moderating effect on inflation in the first half of 2025. This measure is anticipated to lower landed costs of rice imports, with the benefits passed on to wholesale and retail prices. The continued arrival of imports is projected to contribute to easing headline inflation during this period.

III. Risks to the inflation outlook

The risks to the inflation outlook for 2025 and 2026 have become broadly balanced. Upside risks include potential increases in electricity rates, transport charges, and pork prices. Conversely, the main downside risk stems from the spillover effects of lower tariffs on imported rice to domestic rice prices.

Table 8
Baseline and risk-adjusted projections are not materially different from the December assessment
in percent

		December 2024 Monetary Policy Report[a]	February 2025 Monetary Policy Report[b]
Baseline inflation forecast	**2025**	3.3	3.5
	2026	3.5	3.5
Risk-adjusted inflation forecast	**2025**	3.4	3.5
	2026	3.7	3.7

Source: Bangko Sentral ng Pilipinas estimates
[a] Inflation forecasts from the 19 December 2024 monetary policy meeting
[b] Inflation forecasts from the 13 February 2025 monetary policy meeting

The latest risk-adjusted inflation forecasts (RAF) remain within the inflation target range. For 2025, the RAF is slightly higher compared to the previous assessment, primarily due to an upward revision in the baseline forecast. The RAF for 2026 is largely unchanged, with minimal adjustments to both baseline and risk estimates.

[5] The President signed Executive Order (EO) 62 on 20 June 2024 which reduced the tariff on rice to 15.0 percent from 35.0 percent to help bring down the price of imported rice. The reduced rice tariff is effective from 7 July 2024 to 2028, subject to review every four months. NEDA also announced the approval of the new Comprehensive Tariff Program (CTP) from 2024 to 2028, which also included reductions in tariffs on other essential items in the energy and manufacturing sectors and kept the prevailing low rates on key agricultural products.

Table 9
Risk matrix[6]

	Risks	Probability
Upside risks	Higher transport charges	Low
	Higher electricity rates	Low
	Higher pork prices	High
Downside risk	Spillover from rice tariff reduction	Medium

Source: Bangko Sentral ng Pilipinas

Upward pressure on inflation may come from higher transport charges across various public utility vehicles. The risk-adjusted scenario considers the possible implementation of proposed fare hikes for public transportation in the second quarter of 2025. These include potential increases for traditional jeepneys, taxis, buses, and rail services. While these adjustments are under review by regulatory bodies, they are assigned a low probability in the risk assessment.

Table 10
The risk of transport fare adjustments is deemed low
in Ph₱

Transport sector	Current base fare	Proposed adjustment
Public utility jeepney	13.00	17.00
Taxi (flag-down rate)		
CAR, Region VI	50.00	60.00
Other regions	45.00	60.00
Public utility bus		
City (regular)	13.00	15.00
City (airconditioned)	15.00	17.00
Provincial (regular)	11.00	12.67
Metro Rail Transit Line 3	13.00	16.00
Light Rail Transit Line 1	15.00	25.00

Source: Department of Transportation–Land Transportation Franchising and Regulatory Board

The approved fee adjustments at Ninoy Aquino International Airport (NAIA) are expected to impact airfares in the near term. This risk is assigned a high probability, although its inflationary impact is projected to be minimal due to the small weight of air transport in the CPI basket.

[6] The BSP considers different scenarios to determine both the upside and downside risks to the inflation outlook, which are presented in a risk matrix. The scenarios have assigned probability values. Scenarios with more than 75.0 percent probability of taking place over the forecast horizon are included in the baseline. The estimated impact of each scenario is then multiplied by its assigned probability. The sum of the weighted impact for each year will indicate whether the risks to the outlook are balanced, on the upside, or on the downside.

Electricity rates could increase over the forecast horizon following a Supreme Court ruling in July 2023. The decision nullified the previous caps on Wholesale Electricity Spot Market (WESM) prices for November 2013 and December 2013. The risk scenario assumes this adjustment will be distributed evenly over the next three years and incorporates other potential electricity rate adjustments. This risk is assigned a low probability in light of the court ruling.

Higher pork prices could pose another upside risk to inflation. The ongoing impact of African Swine Fever (ASF) continues to affect pork supply and hog repopulation efforts. Given recent trends in retail pork prices and the absence of widespread commercial distribution of the ASF vaccine, this risk is assigned a high probability.

On the downside, the reduction in tariffs on rice imports could lead to further declines in domestically produced rice prices. This risk is assigned a medium probability with the formalization of reduced tariffs through Executive Order (EO) No. 62, dated 20 June 2024. The scenario assumes a gradual decline in domestic rice prices, with the estimated impact lower compared to previous assessments.

Overall, the risks to the inflation outlook are now broadly balanced for 2025 and 2026. Using a 90.0 percent confidence interval for the fan chart, estimates indicate that the likelihood of inflation settling within the target range for 2025 remains above 50.0 percent. However, this probability is slightly lower than in the previous assessment due to the higher risk-adjusted forecast. For 2026, the probability of inflation remaining within the target range has increased to nearly 50.0 percent, with a corresponding decrease in the likelihood of inflation exceeding the upper limit of the target range.

Figure 1
Risks surrounding the inflation projections have become broadly balanced
Using a 90-percent confidence interval, in percent

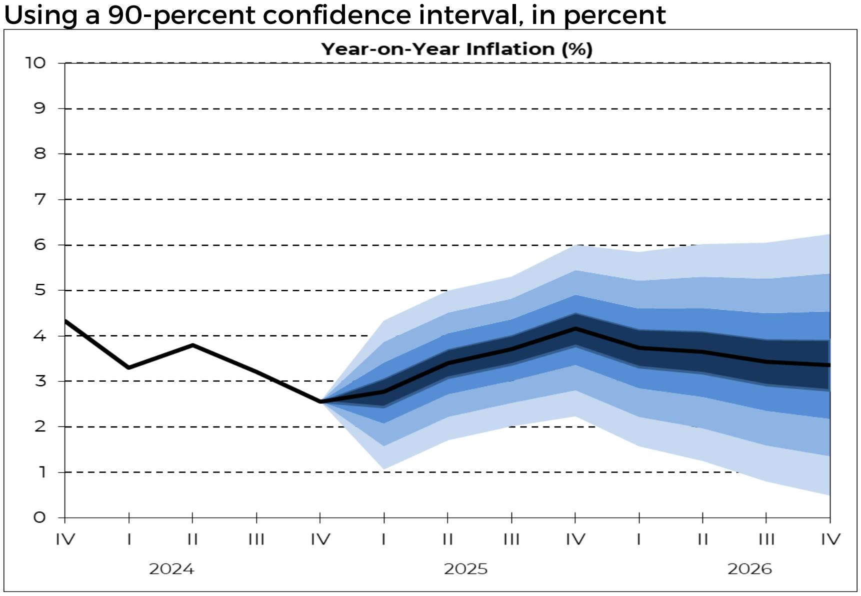


Table 11
Probability distribution of inflation forecasts
in percent

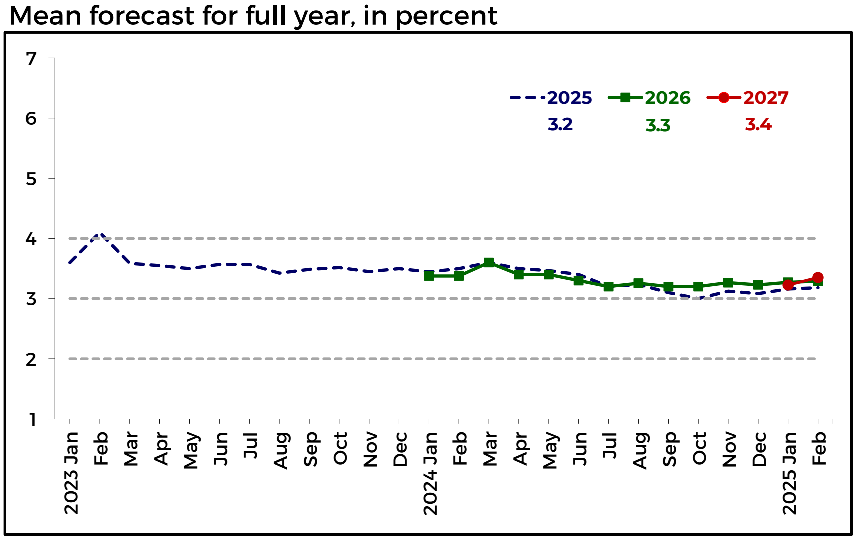
	Pr(<2%)		Pr(2–4%)		Pr(>4%)	
	December 2024 MPR	February 2025 MPR	December 2024 MPR	February 2025 MPR	December 2024 MPR	February 2025 MPR
2025	10.1	9.1	54.6	53.5	35.3	37.4
2026	8.0	13.2	45.8	49.9	46.2	36.9

Source: Bangko Sentral ng Pilipinas estimates

IV. Inflation expectations

The February 2025 BSP Survey of External Forecasters (BSEF) indicates that inflation expectations remain well-anchored within the 2-4 percent target range for 2025 through 2027. Mean inflation forecasts for 2025 and 2026 were unchanged from the previous survey, while respondents anticipate inflation settling near the target in 2027.

Figure 2
Inflation expectations remain well-anchored
Mean forecast for full year, in percent



Source: Bangko Sentral ng Pilipinas
This was based on forecasts provided by 24 respondents.
The survey was conducted from 6-12 December 2024.

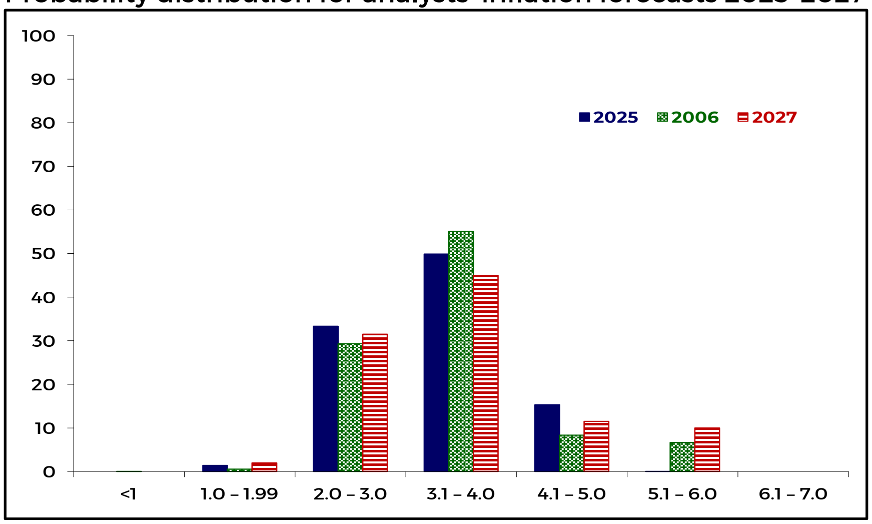
Forecasters identify several potential upside risks to the inflation outlook. These include the effects of geopolitical tensions and adverse weather conditions on commodity prices, particularly oil. Other factors cited are base effects, uncertainties in international trade, potential upward adjustments to utility rates and transport charges, and proposed minimum wage increases.

The primary downside risk to inflation stems from the potential for lower rice prices following the implementation of Executive Order No. 62.

Survey respondents assign a high probability that inflation will remain within the target range over the forecast horizon. For 2025, there is an 83.2-percent chance of inflation settling within 2-4 percent, with a 15.4-percent probability of exceeding the upper bound. The likelihood of inflation falling within the target range is estimated at 84.4 percent for 2026 and 76.5 percent for 2027.

Regarding monetary policy expectations, most analysts anticipate a loosening of the BSP's stance in 2025, with projections ranging from 50 to 100 bps of easing. Views on the 2026 target RRP rate are more diverse, spanning from a 75-bp reduction to no change. For 2027, a majority of respondents foresee the BSP continuing on an easing path.

Figure 3
The probability that inflation will settle within the target range in 2025 and 2026 has decreased
Probability distribution for analysts' inflation forecasts 2025–2027



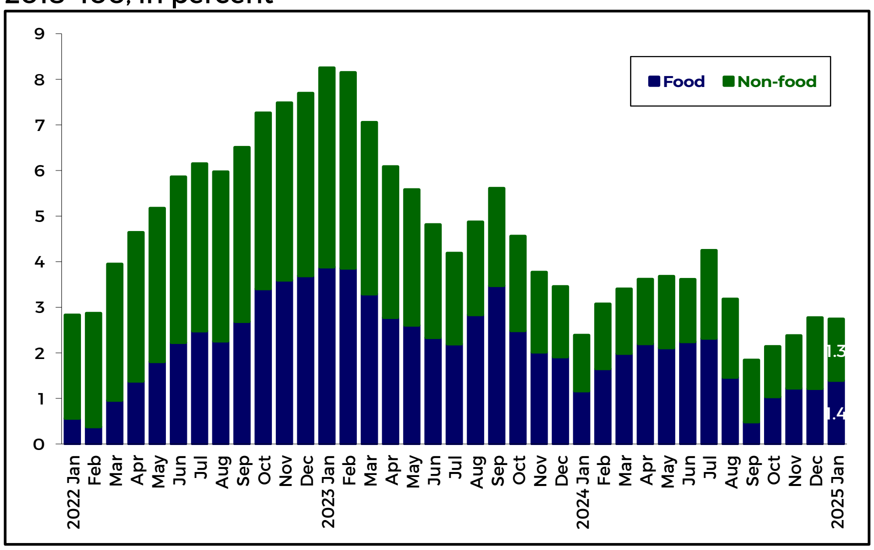
Source: Bangko Sentral ng Pilipinas Survey (December 2024)
Probability distributions were averages of those provided by 18 out of 24 respondents.

B. Current developments

I. Price conditions

Headline inflation remained within the target range of 2.0-4.0 percent in January, holding steady at 2.9 percent. Food prices saw upticks due to weather-related disruptions affecting vegetables and fish supplies, as well as ongoing African Swine Fever cases impacting meat prices. Nonetheless, these were offset by moderating non-food inflation. The January inflation outcome fell within the BSP's month-ahead forecast range of 2.5–3.3 percent.

Figure 4
Headline inflation remains within the target range
2018=100, in percent



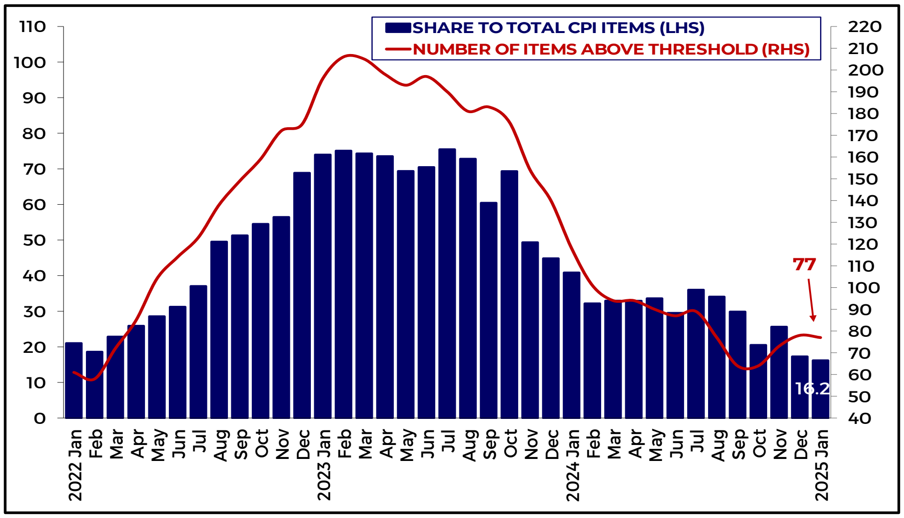
Sources: Philippine Statistics Authority; Bangko Sentral ng Pilipinas

An analysis of individual CPI components reveals a nuanced picture. The number of items with inflation rates exceeding the 4.0 percent upper bound of the target range decreased marginally to 77 in January 2025, accounting for 16.2 percent of the total CPI weight. This reduction was partly attributable to a significant decline in rice inflation, supported by continued import arrivals subject to lower tariffs. Conversely, 150 items, representing approximately 41 percent of the CPI basket, exhibited inflation rates below the target threshold, while the remaining 88 items fell within the target range.

Figure 5

The bulk of the CPI items had inflation rates below 2 percent

2018=100



Sources: Philippine Statistics Authority; Bangko Sentral ng Pilipinas

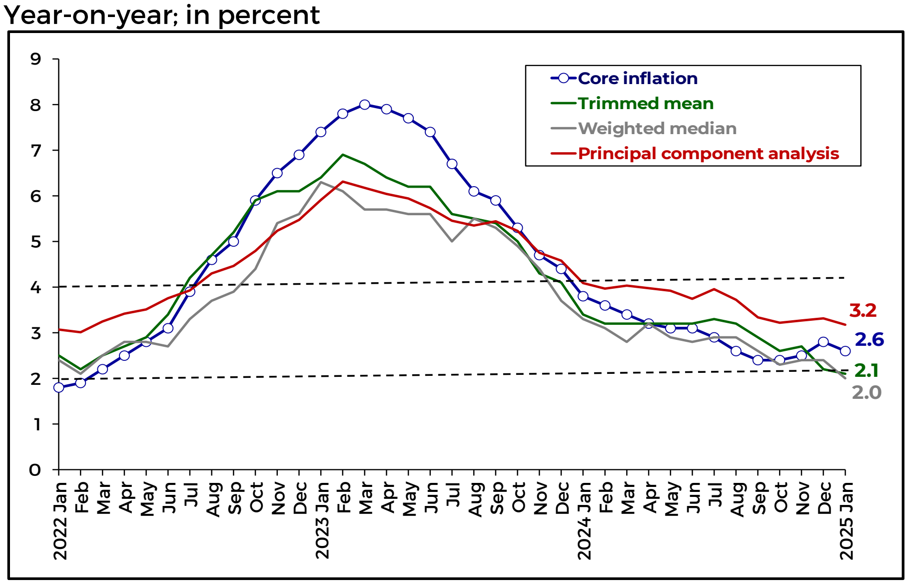
RHS – right-hand side; LHS – left-hand side

Core inflation, which excludes volatile food and energy items, continued its downward trajectory in January, suggesting an absence of demand-driven price pressures. This trend was consistent across both the official core inflation measure and the BSP-computed indicators.

Figure 6

Estimates of core inflation measures continued to ease

Year-on-year; in percent

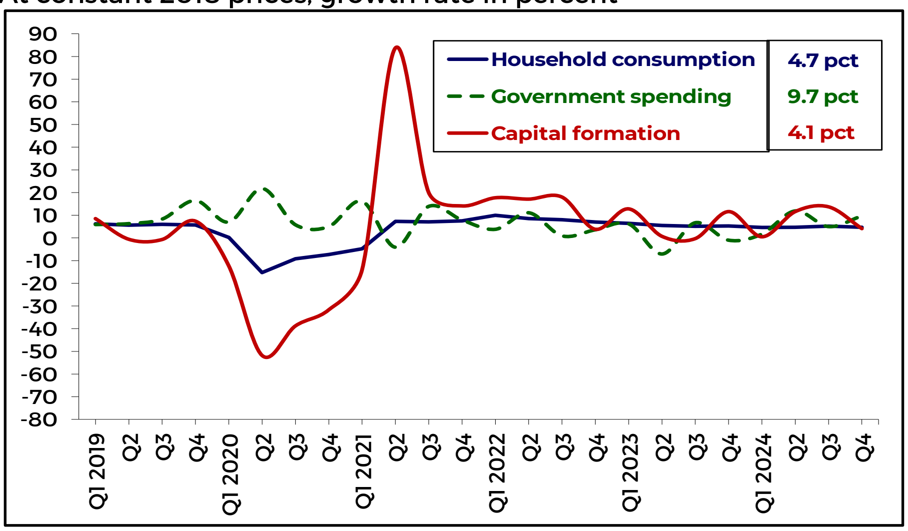


Sources: Philippine Statistics Authority; Bangko Sentral ng Pilipinas (BSP) staff calculations

II. Demand conditions

Economic growth remained steady at 5.2 percent in Q4 2024, bringing the full-year real GDP growth to 5.6 percent, marginally below the government's 6.0-6.5 percent target. While domestic demand remained firm, it experienced a slowdown due to weather-related disruptions, global trade policy uncertainty, and tight financial conditions.

Figure 7
Government spending supported Q4 GDP growth
At constant 2018 prices; growth rate in percent



Source: Philippine Statistics Authority

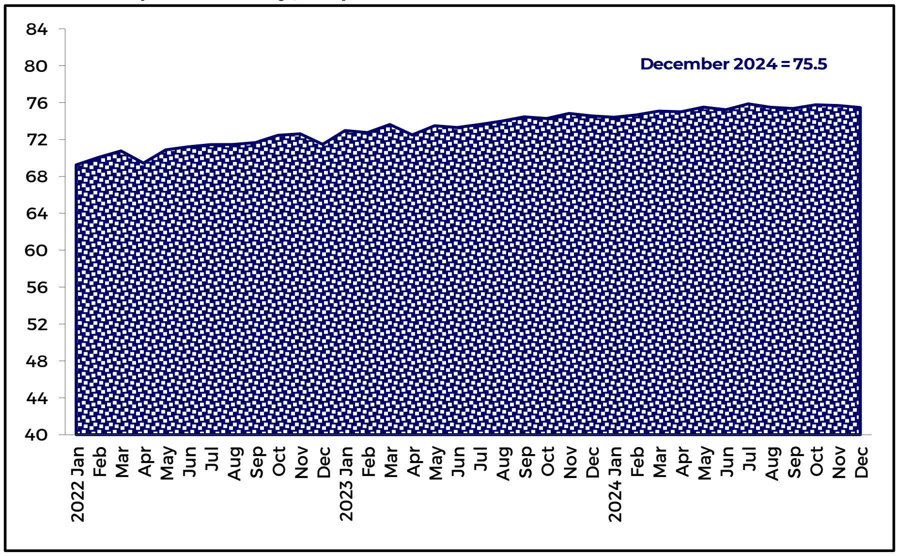
Household spending decelerated, particularly in food and non-alcoholic beverages, clothing and footwear, communication, and restaurant and hotel expenditures. This outweighed increased spending in other categories such as alcoholic beverages, utilities, furnishings, health, transport, and recreation and culture.

Investment growth moderated, primarily due to slower growth in durable equipment and contractions in breeding stocks and valuables. In contrast, government expenditure accelerated, driven by higher disbursements for infrastructure projects, maintenance and other operating expenses, transfers to local government units, personnel services, and interest payments.

Capacity utilization weakened. The PSA's Monthly Integrated Survey of Selected Industries reported that 55.4 percent of respondent-establishments operated at or above 80.0 percent capacity in December 2024, a slight decrease from the previous month.[7]

[7] Monitoring the response rate helps the BSP understand the quality of data reported and how representative it can be. The response rate of surveyed establishments increased to 56.5 percent (preliminary) in November 2024 from 60.2 percent (preliminary) in October 2024. The revised response rate for October 2024 was 69.5 percent.

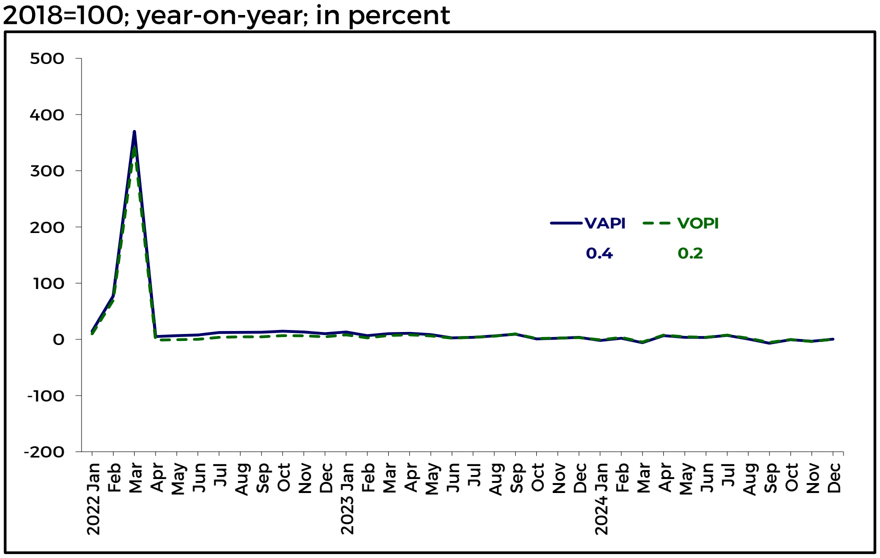
Figure 8
Average capacity utilization rate in manufacturing moderated slightly in December
2018=100; preliminary; in percent



Source: Philippine Statistics Authority

However, factory output, as measured by the volume of production index, rebounded in December, attributed to improved raw material availability, enhanced logistics, and easing inflationary pressures. The value of production index also expanded during this period.

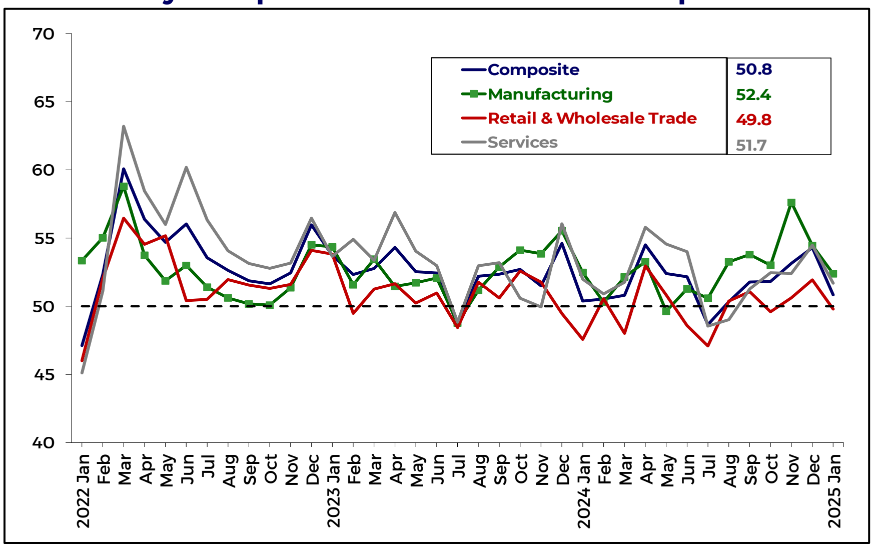
Figure 9
Factory output and value of production recovered
2018=100; year-on-year; in percent



Source: Philippine Statistics Authority

The purchasing managers' index (PMI) for January 2025 stood at 50.8, indicating expansion.[8] While business activity across major economic sectors experienced a seasonal slowdown at the start of the year, managers in the manufacturing and retail and wholesale sectors anticipate improved conditions in February 2025. The services sector, however, is expected to remain subdued throughout the year.

Figure 10
Preliminary composite PMI rose at a slower pace



Source: Philippine Institute of Supply Management

III. Supply conditions

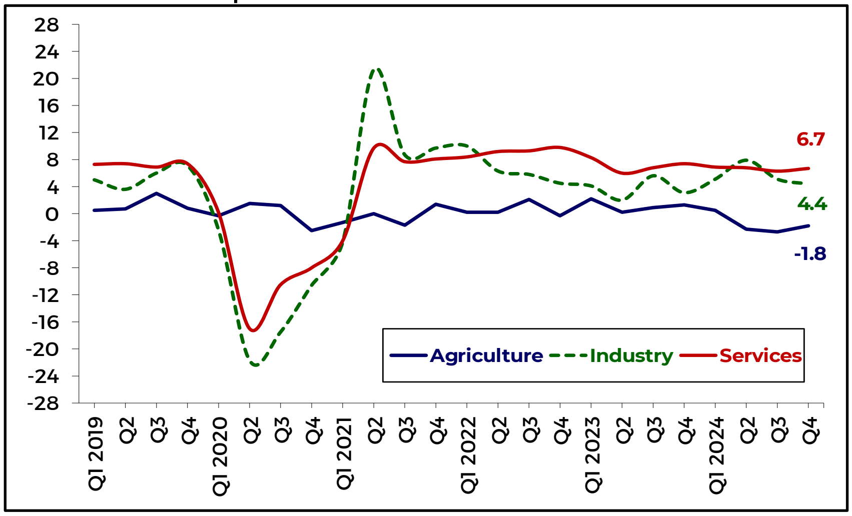
The services sector remained the primary contributor to GDP growth in Q4. All sub-industries within the sector expanded, with wholesale and retail trade, repair of motor vehicles and motorcycles, financial and insurance activities, and professional and business services leading the way. This broad-based growth in services reflects the ongoing recovery in domestic demand and consumer confidence.

Industry growth moderated in Q4 but remained positive overall. Construction and manufacturing were the main drivers of growth within this sector, while mining and quarrying experienced a contraction. The continued expansion in construction activity suggests ongoing investment in infrastructure and real estate development.

In contrast, the agriculture sector faced significant headwinds during the quarter. Successive typhoons adversely impacted crop production, while the persistent effects of African Swine Fever (ASF) continued to weigh on livestock output. These challenges in the agriculture sector underscore the need for enhanced resilience and risk management strategies in the face of climate-related and biosecurity risks.

[8] The actual formula used to calculate the PMI assigns weights to each common element and then multiplies them by 1.0 for improvement, 0.5 for no change, and 0 for deterioration. As a result, an index above 50 indicates economic expansion, and an index below 50 implies a contraction. PMI surveys are conducted on the last week of the month.

Figure 11
Production output slowed as agriculture contracted
At constant 2018 prices



Source: Philippine Statistics Authority

Global oil prices

Global crude oil prices declined[9] in Q4, influenced by a combination of geopolitical factors. The threat of higher tariffs on US imports from Canada, Mexico,[10] and China created uncertainty in global trade, while plans to maximize US oil and gas production and accelerate infrastructure permits put downward pressure on prices. Additionally, the ceasefire agreement between Israel and Gaza, which began on 19 January 2025, contributed to a reduction in the risk premium on global oil prices.[11]

Labor market conditions

Labor market conditions remained robust. The unemployment rate decreased to 3.1 percent in December, bringing the full-year average to 3.8 percent. This rate is notably lower than the 10-year average of 4.8 percent. Similarly, the underemployment rate declined to 10.9 percent from 11.9 percent a year ago, well below the 10-year average of 14.4 percent. The decline in underemployment was largely due to a reduction in visible underemployment, indicating improvements in both the quality and quantity of employment opportunities.

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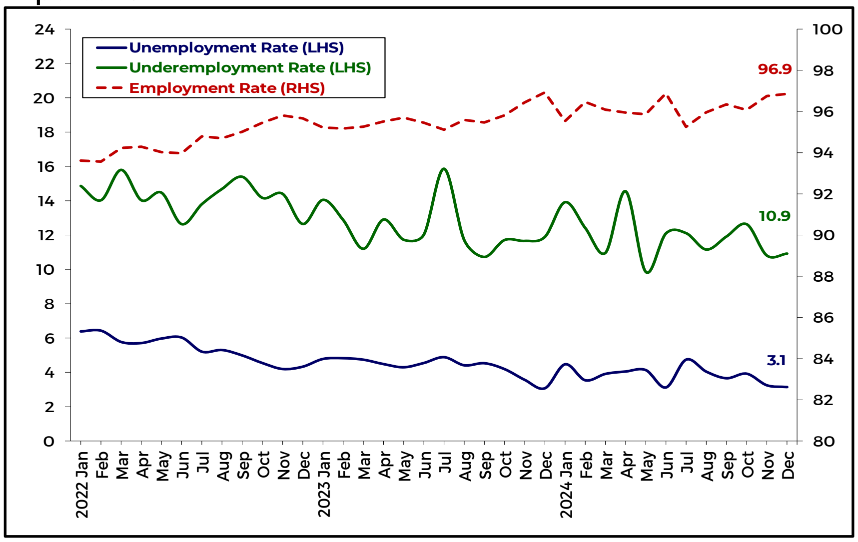
[9] Based on the average spot price of Dubai crude oil in the first three days of February 2025 compared to the 1-3 January 2025 average and the month-to-date average in January 2025.
[10] Nonetheless, US President Trump paused the implementation of tariffs for Canada and Mexico for 30 days. Source: Reuters (3 February 2025). "Oil prices close at 1-month low as US pauses tariffs on Mexico." https://www.reuters.com/markets/commodities/oil-prices-jump-after-trump-imposes-tariffs-canada-mexico-china-2025-02-02/
[11] Reuters (21 January 2025). "Oil falls as Trump's plan to boost US oil output takes shape." https://www.reuters.com/business/energy/us-crude-futures-down-1-barrel-trump-plan-boost-fossil-fuel-output-2025-01-20/
Reuters (17 January 2025). "Oil prices dip but post 4th straight weekly gain on US sanctions." https://www.reuters.com/markets/commodities/oil-prices-climb-supply-fears-fed-rate-cut-hopes-2025-01-17/

Figure 12
Labor market indicators showed improvement
in percent

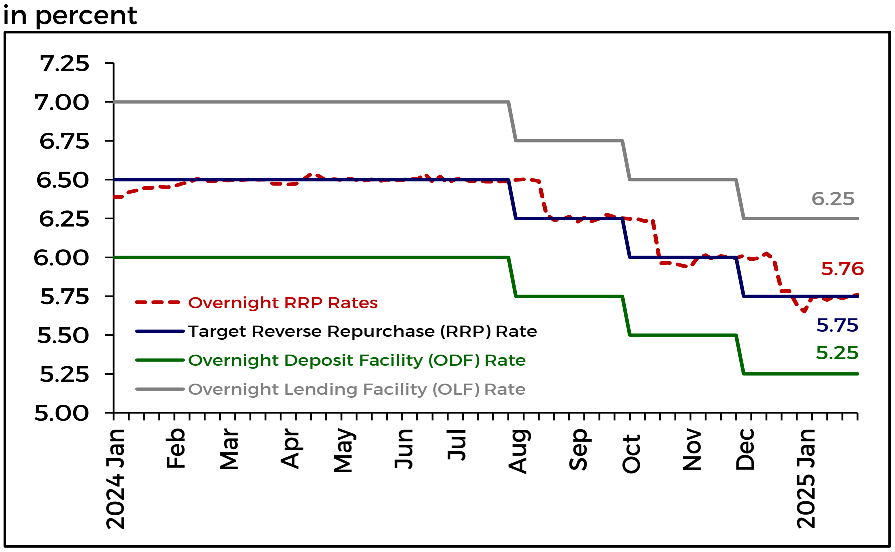


Source: Philippine Statistics Authority

IV. Monetary operations

The BSP continued to effectively manage system liquidity through its monetary operations, absorbing a total of ₱1.7 trillion as of 28 January 2025. Term instruments, comprising the BSP securities facility (BSP SF) and term deposit facilities (TDF), remained the primary tools for liquidity absorption, accounting for 67.5 percent of total placements. The overnight (ON) reverse repurchase (RRP) facility constituted 21.2 percent of total placements, while the overnight deposit facility (ODF) made up the remaining 11.3 percent.

Figure 13
The daily ON RRP rate closely tracked the target RRP rate
in percent

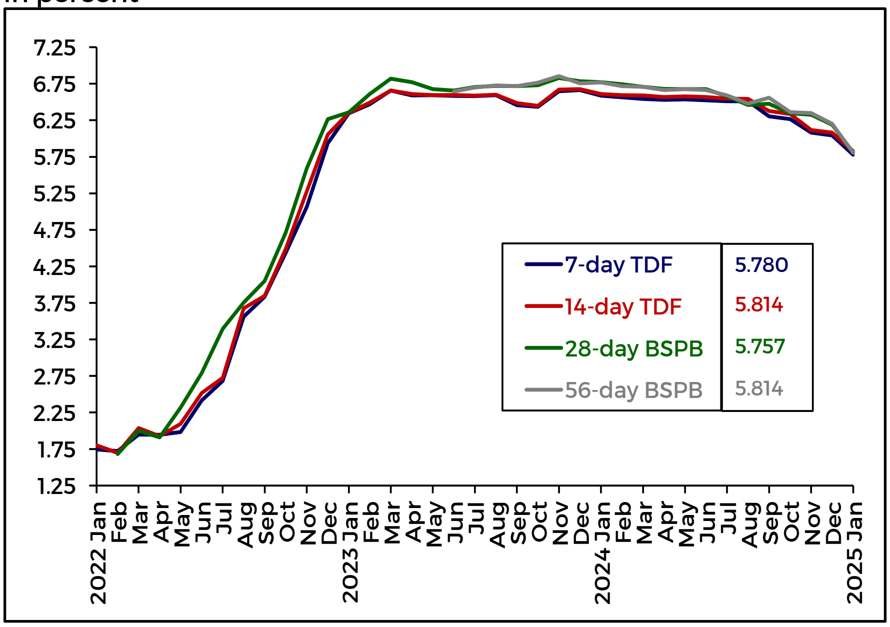


These monetary operations have been instrumental in maintaining the operational target rate, the ON RRP rate, in close alignment with the target RRP rate. This alignment is crucial for the effective transmission of monetary policy decisions to market interest rates and, ultimately, to the broader economy.

Figure 14

Interest rates on TDFs and BSP bills declined following the policy rate reductions through end-2024

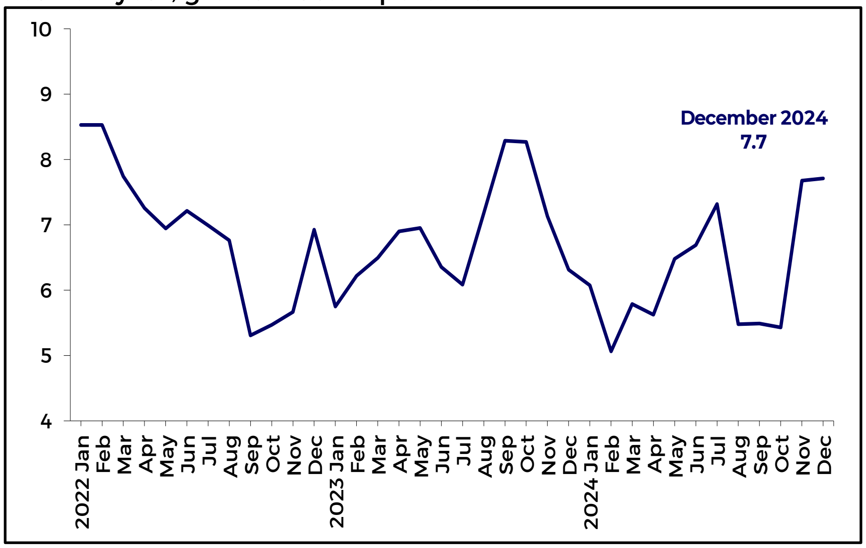
in percent



V. Financial conditions

Domestic liquidity (M3) expanded in December 2024, driven by growth in bank lending to non-financial private corporations and households. The increase in M3 was further supported by rising net claims on the central government, partly due to continued borrowings by the national government. On the liabilities side, growth in time deposits was the primary contributor to the expansion in M3.

Figure 15
M3 grew faster in December
Year-on-year; growth rate in percent



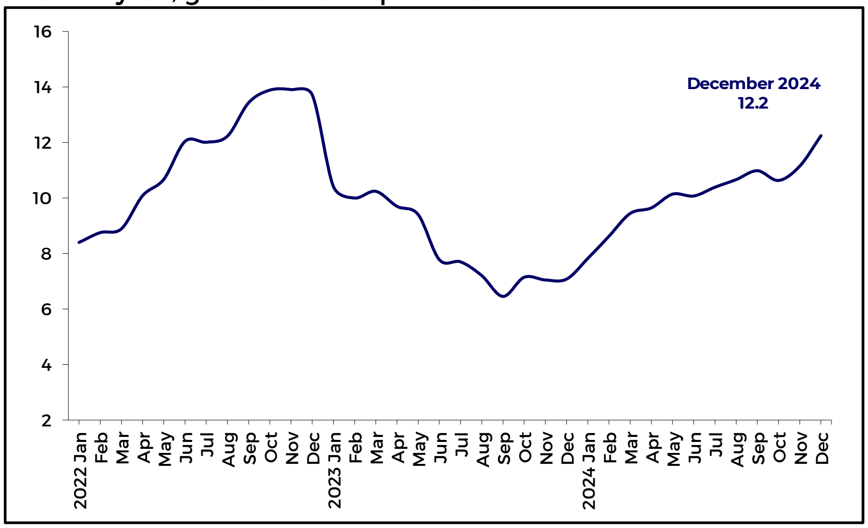
Source: Bangko Sentral ng Pilipinas

Bank lending showed robust growth in December 2024, with credit expansion observed across major sectors. Preliminary data indicated that outstanding loans of universal and commercial banks (U/KBs), net of RRP placements with the BSP, grew by 12.2 percent y-o-y in December, accelerating from 11.1 percent in November. Both outstanding loans to residents (net of RRPs) and non-residents[12] expanded at a faster pace during the month.

Production activities saw increased lending, with sustained growth observed in key industries such as wholesale and retail trade, repair of motor vehicles and motorcycles; electricity, gas, steam and air-conditioning supply; manufacturing; financial and insurance activities; and construction. Consumer loans to residents also rose, primarily driven by increases in credit card loans, salary-based general purpose consumption loans, and motor vehicle loans.

[12] Outstanding loans to non-residents include loans extended by U/KBs through their foreign currency deposit units.

Figure 16
Outstanding loans of UKBs accelerated in December
Year-on-year; growth rate in percent



Source: Bangko Sentral ng Pilipinas

Credit standards for enterprise loans remained largely unchanged in Q4 2024, according to the modal approach of the survey. However, the diffusion index (DI) suggested a net tightening of credit standards, attributed to deteriorating borrower profiles and decreased profitability in banks' portfolios. Looking ahead to Q1 2025, both modal and DI methods indicated that most banks expect lending standards to remain stable, reflecting a steady economic outlook and unchanged risk tolerance and borrower profiles.

Regarding loan demand, while the modal approach showed broadly unchanged demand for enterprise loans, the DI method indicated a modest increase. This increase was driven by higher inventory financing needs, optimistic economic expectations, and increased short-term financing demands. For the following quarter, the modal approach suggested that a lower but still predominant percentage of surveyed banks expect lending standards for enterprises to remain generally unchanged. In contrast, the DI results pointed to a net increase in loan demand from enterprises, driven by higher inventory and short-term financing needs, as well as more optimistic expectations.

Table 12

Modal approach indicated steady lending standards to enterprise while the DI method pointed to net tightening of credit standards

	2022				2023				2024			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Tightened considerably	10.0	6.5	10.4	4.3	6.7	4.3	2.1	0.0	0.0	1.9	2.0	1.9
Tightened somewhat	16.0	13.0	8.3	12.8	13.3	4.3	10.6	12.0	11.8	11.1	13.7	14.8
Remained basically unchanged	**72.0**	**76.1**	**77.1**	**80.9**	**73.3**	**89.1**	**80.9**	**88.0**	**86.3**	**87.0**	**80.4**	**83.3**
Eased somewhat	2.0	4.3	4.2	2.1	6.7	2.2	6.4	0.0	2.0	0.0	3.9	0.0
Eased considerably	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100	100	100	100	100	100	100	100	100	100	100	100
Diffusion index for credit standards	**24.0**	**15.2**	**14.6**	**14.9**	**13.3**	**6.5**	**6.4**	**12.0**	**9.8**	**13.0**	**11.8**	**16.7**
Weighted diffusion index	**17.0**	**10.9**	**12.5**	**9.6**	**10.0**	**5.4**	**4.3**	**6.0**	**4.9**	**7.4**	**6.9**	**9.3**
Mean	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.8
Number of banks responding	**50**	**46**	**48**	**47**	**45**	**46**	**47**	**50**	**51**	**54**	**51**	**54**

Source: Bangko Sentral ng Pilipinas
A positive diffusion index for credit standards indicates that banks that tightened their credit standards outnumbered those that eased ("net tightening"), whereas a negative diffusion index indicates that banks that eased their credit standards outnumbered those that tightened ("net easing").

For household loans, a higher percentage of banks maintained their credit standards in Q4 2024. The DI also indicated unchanged standards during the quarter, attributed to stable borrower profiles, risk tolerance, and profitability. Looking ahead to Q1 2025, a slightly higher percentage of banks anticipate consumer loan standards to remain unchanged. However, the DI method suggests a net tightening due to expectations of lower portfolio profitability and reduced risk tolerance.

Household loan demand remained largely steady according to most banks. The DI, however, indicated a slight overall rise in consumer loans, driven by more attractive financing terms and higher consumption. For the upcoming quarter, while a lower but still predominant percentage of banks expect steady household loan demand, the DI method suggests a net increase in demand amid rising consumption and more favorable credit terms offered by banks.

Table 13
Banks maintained their credit standards for household loans

	2022				2023				2024			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Tightened considerably	2.5	5.4	5.4	5.7	3.0	3.0	0.0	0.0	0.0	0.0	2.9	0.0
Tightened somewhat	12.5	5.4	10.8	8.6	18.2	9.1	15.6	11.8	11.4	7.9	8.6	5.3
Remained basically unchanged	**62.5**	**73.0**	**64.9**	**71.4**	**51.5**	**69.7**	**68.8**	**70.6**	**77.1**	**84.2**	**80.0**	**89.5**
Eased somewhat	17.5	13.5	18.9	14.3	27.3	12.1	12.5	14.7	11.4	7.9	8.6	5.3
Eased considerably	5.0	2.7	0.0	0.0	0.0	6.1	3.1	2.9	0.0	0.0	0.0	0.0
Total	100	100	100	100	100	100	100	100	100	100	100	100
Diffusion index for credit standards	**-7.5**	**-5.4**	**-2.7**	**0.0**	**-6.1**	**-6.1**	**0.0**	**-5.9**	**0.0**	**0.0**	**2.9**	**0.0**
Weighted diffusion index	**-5.0**	**-1.4**	**1.4**	**2.9**	**-1.5**	**-4.5**	**-1.6**	**-4.4**	**0.0**	**0.0**	**2.9**	**0.0**
Mean	3.1	3.0	3.0	2.9	3.0	3.1	3.0	3.1	3.0	3.0	2.9	3.0
Number of banks responding	**40**	**37**	**37**	**35**	**33**	**33**	**32**	**34**	**35**	**38**	**35**	**38**

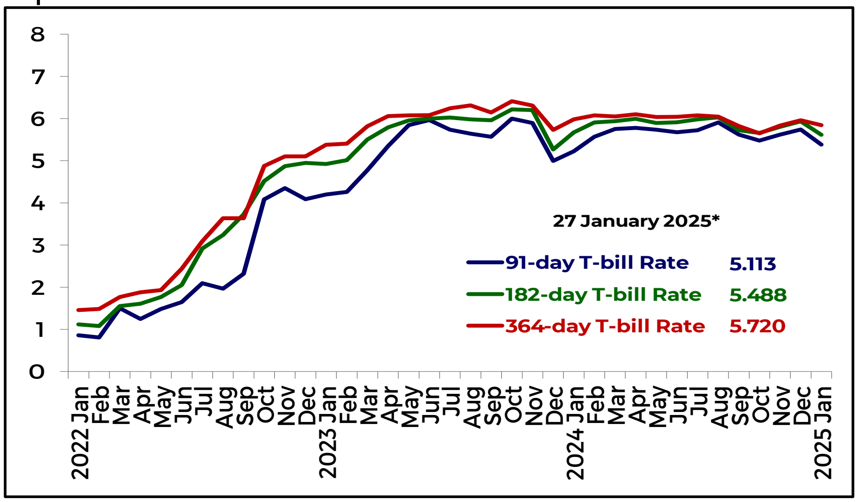
Source: Bangko Sentral ng Pilipinas
A positive diffusion index for credit standards indicates that more banks have tightened their credit standards compared to those that eased ("net tightening"), whereas a negative diffusion index for credit standards indicates that more banks have eased their credit standards compared to those that tightened ("net easing").

VI. Capital market

The primary government securities (GS) market reflected expectations of a further monetary policy easing in February. The Bureau of the Treasury (BTr) successfully raised ₱27.6 billion from Treasury bill auctions, surpassing the initial ₱22.0-billion offering. Strong demand was evident, with total tenders reaching ₱91.1 billion, or 4.1 times the initial offering. This robust appetite prompted the BTr to double the accepted non-competitive bids across all tenors.

On 28 January 2025, the BTr fully awarded ₱35.0 billion of Treasury bonds, comprising ₱15 billion of re-issued 7-year bonds and ₱20 billion of newly issued 25-year bonds. Total tenders amounted to ₱120.6 billion, or 3.4 times the offered amount. The re-issued 7-year bonds, with a remaining life of 3 years and 2 months, fetched an average rate of 5.894 percent, while the 25-year bonds yielded 6.334 percent on average. Both rates were lower than corresponding BVAL rates on 27 January, reflecting the strong demand.

Figure 17
Average interest rates for all T-bill tenors declined
in percent

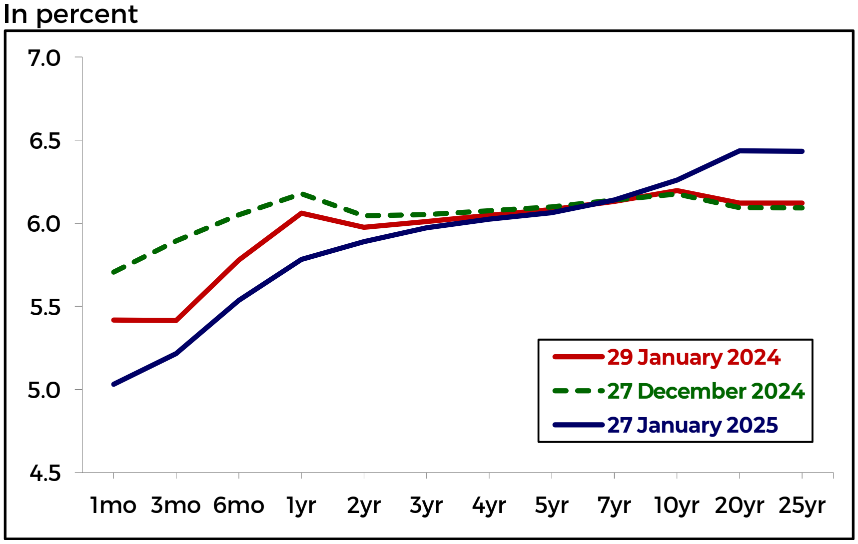


Source: Bureau of the Treasury
*During the 27 January 2025 T-bill auction

In the secondary market, GS yields generally decreased relative to end-December 2024 levels. Client demand was particularly robust in the short end of the curve, driven by sizeable Treasury bill maturities and expectations of further policy rate cuts. Consequently, the spreads between secondary market rates and the ON RRP rate narrowed compared to end-December 2024.

As of 27 January 2025, the yield curve steepened, with the spread between 10-year and 1-year GS rates widening to 47.7 bps from -0.1 bps at end-December 2024. Similarly, the spread between 10-year and 5-year rates expanded to 19.5 bps from 7.8 bps. This steepening was primarily due to a significant increase in the 10-year rate.

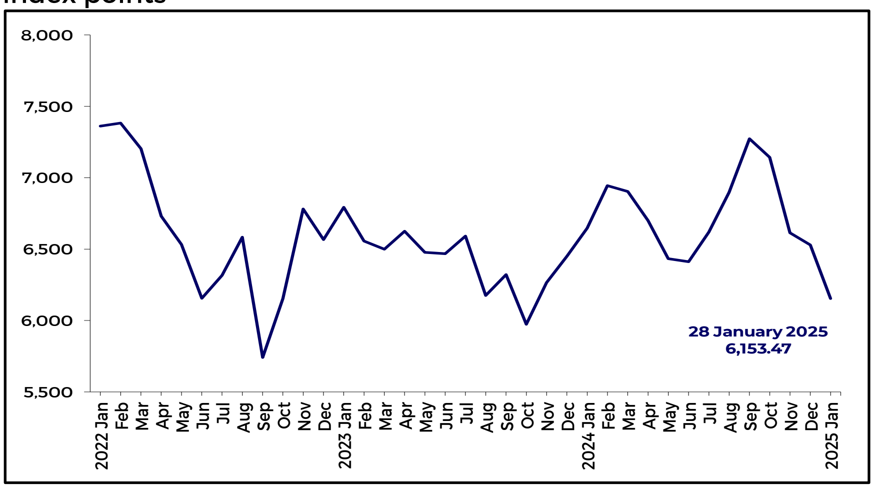
Figure 18
Spreads between GS rates widened
In percent



Source: Bloomberg

The Philippine Stock Exchange Index (PSEi) declined amid increased uncertainty over potential US tariff impacts and negative sentiment from US equity markets, reflecting expectations of a slower pace of monetary policy easing by the Fed. Domestically, reports of higher national government outstanding debt[13] and concerns about the Philippines potentially missing its 2024 economic growth target weighed on the local stock market.[14] However, Fitch Solutions Business Monitor International's higher growth forecast for the Philippines helped temper the decline.[15]

Figure 19
The stock market index fell in January
index points

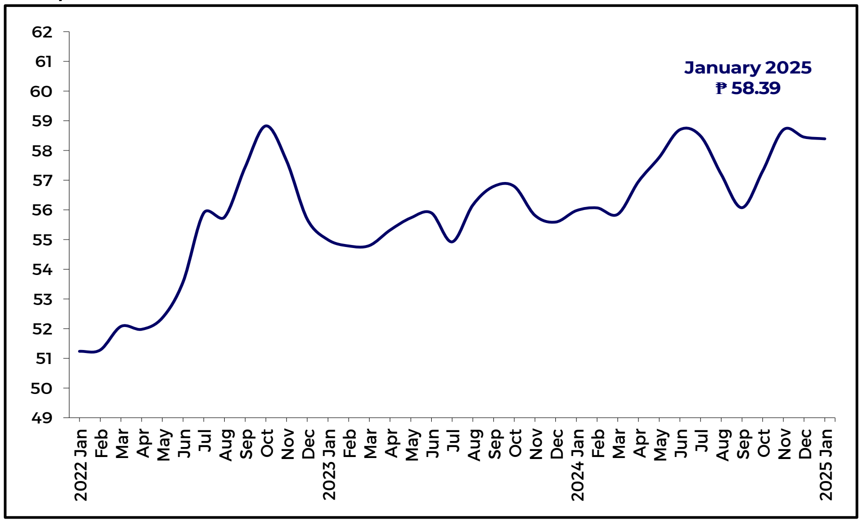


Sources: Philippine Stock Exchange; Bangko Sentral ng Pilipinas

The peso appreciated in January, supported by a broad weakening of the US dollar and improved market sentiment. Seasonal increases in overseas Filipino remittances and favorable domestic data releases, including the resilience of the country's overall balance of payments position and lower unemployment rate, bolstered the currency. These positive factors were partially offset by reports of weaker-than-expected Q4 2024 GDP growth, higher inflation in December, and lower gross international reserves. On a year-to-date basis, the peso closed at ₱58.10/US$1 on 5 February 2025, depreciating by 0.43 percent against the US dollar.

[13] Data from the Bureau of the Treasury showed that outstanding debt increased to ₱16.1 trillion as of end-November 2024 from ₱16.0 trillion as of end-October.
[14] The market expects the Philippines' GDP growth in 2024 to be slower than the 5.6 percent growth recorded in 2023.
[15] Fitch Solutions' unit BMI is expecting the Philippine growth to accelerate to 6.3 percent in 2025 driven primarily by monetary policy easing. (bworldonline.com)

Figure 20
The peso appreciated in January
PHP/USD



Source: Reference Exchange Rate Bulletin

In real trade-weighted terms, the peso gained external price competitiveness y-o-y in January against the basket of currencies of all trading partners (TPI) and trading partners in developing (TPI-D) countries, as indicated by a decrease in the Real Effective Exchange Rate index.[16] This real depreciation largely reflected sustained US dollar strength.[17] However, the peso lost competitiveness relative to the basket of currencies of trading partners in advanced (TPI-A) countries, primarily due to widening inflation differentials.

VII. External developments

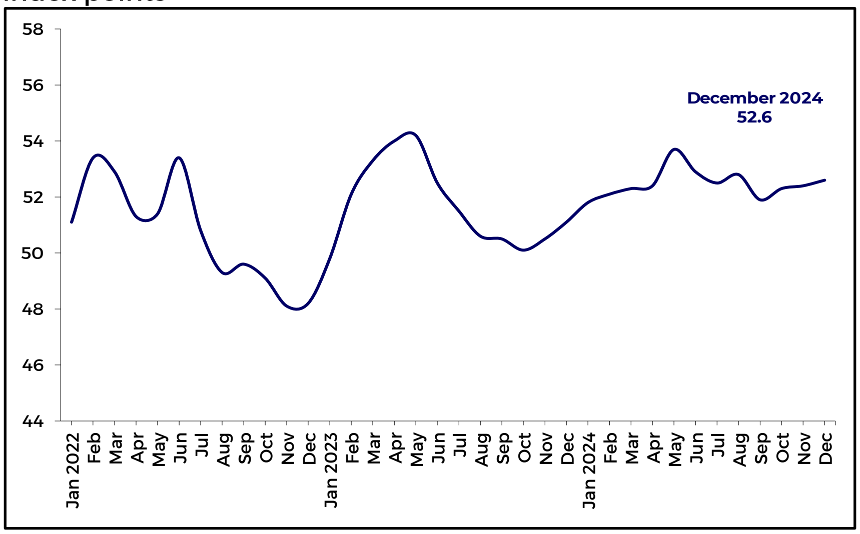
Global economic activity expanded, driven primarily by robust growth in the services sector. The expansion was particularly notable in business, consumer, and financial services, which contributed to overall economic strength. However, this growth was not uniform across all sectors, as manufacturing activity contracted due to declining production volumes in intermediate and investment goods.[18]

The pace of economic expansion varied significantly among countries. India, Spain, and the United States experienced strong growth rates, while the euro area continued

[16] The Trading Partners Index (TPI) measures the nominal and real effective exchange rates of the peso across the currencies of 14 major trading partners of the Philippines which include US, Euro Area, Japan, Australia, China, Singapore, South Korea, Hong Kong, Malaysia, Taiwan, Indonesia, Saudi Arabia, United Arab Emirates, and Thailand. The TPI-Advanced (TPI-A) measures the effective exchange rates of the peso across currencies of trading partners in advanced countries comprising of the US, Japan, Euro Area, and Australia. The TPI-Developing (TPI-D) measures the effective exchange rates of the peso across 10 currencies of partner developing countries which includes China, Singapore, South Korea, Hong Kong, Malaysia, Taiwan, Indonesia, Saudi Arabia, United Arab Emirates, and Thailand.
[17] The REER index represents the Nominal Effective Exchange Rate (NEER) index of the peso, adjusted for inflation rate differentials with the countries whose currencies comprise the NEER index basket. The NEER index, meanwhile, represents the weighted average exchange rate of the peso vis-à-vis a basket of foreign currencies.
[18] JP Morgan Global Composite PMI, https://www.pmi.spglobal.com/. A diffusion index is calculated for each survey variable. The index is the sum of the percentage of 'higher' responses and half the percentage of 'unchanged' responses. The indices vary between 0 and 100, with a reading above 50 indicating an overall increase compared to the previous month, and below 50 an overall decrease.

to face economic challenges, with business activity remaining in contraction. This divergence in economic performance highlights the uneven nature of the global recovery.

Figure 21
JP Morgan Global All-Industry Output Index rose
index points



Source: Markit Economics

The IMF, in its January 2025 WEO Update, maintained its global economic growth projections at 3.3 percent for both 2025 and 2026. The outlook for advanced economies was revised upward by 0.1 percentage point from the October 2024 forecast, largely due to the sustained expansion of economic activity in the US. This positive development more than offset the deteriorating growth prospects in the euro area.

For emerging markets and developing economies, economic growth is expected to remain broadly stable. However, regional variations are likely to persist, influenced by ongoing trade policy uncertainty. This underscores the complex and interconnected nature of the global economy, where policy decisions and economic conditions in one region can have far-reaching effects on others.

Central banks around the world continued to adjust their monetary policies in response to evolving economic conditions. In February 2025, several major central banks, including the Reserve Bank of India, Bank of England, Bank Indonesia, Bank of Canada, and the European Central Bank, lowered their policy interest rates. These decisions reflect a collective effort to support economic growth and maintain price stability in the face of ongoing challenges.

In contrast, the Bank of Japan raised its key policy rate, signaling a shift in its monetary stance. Meanwhile, the Bank of Korea, the People's Bank of China, Bank Negara Malaysia, and the US Fed maintained their policy rates, opting to assess the impact of previous interest rate reductions before making further adjustments. These diverse policy actions highlight the nuanced approach central banks are taking to navigate the complex global economic landscape.

C. Selected thematic articles

Box Article 1:

E-Commerce price index prediction with time series mining and automated machine learning[1]

The BSP uses the Consumer Price Index (CPI) as its primary indicator of inflation. The CPI is generated by the Philippine Statistics Authority (PSA) using data from its Retail Prices Survey (RPS). The conduct of RPS requires substantial financial resources, extensive human labor, and may be susceptible to unforeseen circumstances. As a complement to the RPS, this study uses big data analytics and machine learning (ML) techniques to create an e-commerce-based CPI. This provides the BSP with a supplementary tool for monitoring inflation trends.

Using new data sources to examine CPI food price patterns

This study utilizes data from a major e-commerce company in the Philippines, covering the period from April 2021 to October 2024. It focuses on the food and non-alcoholic beverages group, which makes up 37.75 percent of the CPI basket. The dataset includes over 19 million price quotes for over 659,000 unique items across 16,000 product categories from 10,960 online merchants. The study highlights 480 food products that are used to forecast CPI trends.

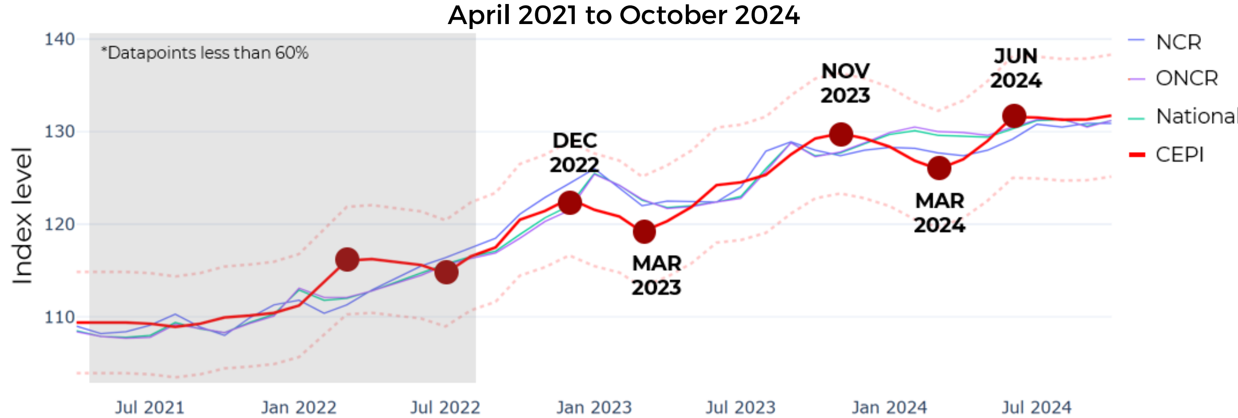
Analyzing food price trends using Machine Learning in three stages

This study follows a three-step process to create the food Composite E-Commerce Price Index (CEPI) and forecast the food CPI. The first step is data preprocessing, which ensures dataset accuracy and consistency. This includes data ingestion and validation, normalizing prices based on product sizes, standardizing merchant-level prices, detecting and removing outliers, and harmonizing category names. The second step focuses on building the CEPI using the Dynamic Time Warping (DTW) algorithm to find products with price patterns similar to CPI movements. The composite index is created by calculating the mean of the top 10 percent of products most similar to the CPI, then using linear regression to align it with CPI scales. The final step involves testing different regression-based machine learning models, such as Linear, Decision Tree, Random Forest, Ridge Regression, Huber Regression, AdaBoost, K-Nearest Neighbors, and Gradient Boosting Regression, to forecast the CPI.

CEPI strongly correlates with the official food price index, showing regional variations

The results show a strong correlation between the food CEPI and the official food CPI. Over 24-months, the correlation remains consistently high at around 88 percent across all regions. However, when extended to 36 months, the correlation varies. In the National Capital Region (NCR), the food CEPI correlates strongly with the food CPI at 81.96 percent. At the national level, this correlation drops to 69.82 percent, and further declines to 51.61 percent in areas outside NCR (AONCR). This decrease is due likely to limited online shopping data in earlier periods and the uneven adoption of e-commerce across the Philippines.

Figure 1
Official Food CPIs vs. (CEPI)
April 2021 to October 2024



Source: Bangko Sentral ng Pilipinas staff calculations

Table 1
Correlations of CEPI with Official Food CPIs

Timeframe	National	NCR	AONCR
24 months	88.15%	88.22%	88.51%
36 months	69.82%	81.96%	51.61%

* All correlations have a p-value < 0.05 (statistically significant relationship).
Source: Bangko Sentral ng Pilipinas staff calculations

The food CEPI shows noticeable fluctuations in its deviation from the official food CPI. As seen in Table 2, while the food CEPI generally follows the trends of the official food CPI, there are significant differences, particularly in areas outside the AONCR. These variations suggest a need for further investigation into the factors causing these discrepancies and their impact on inflation analysis and forecasting.

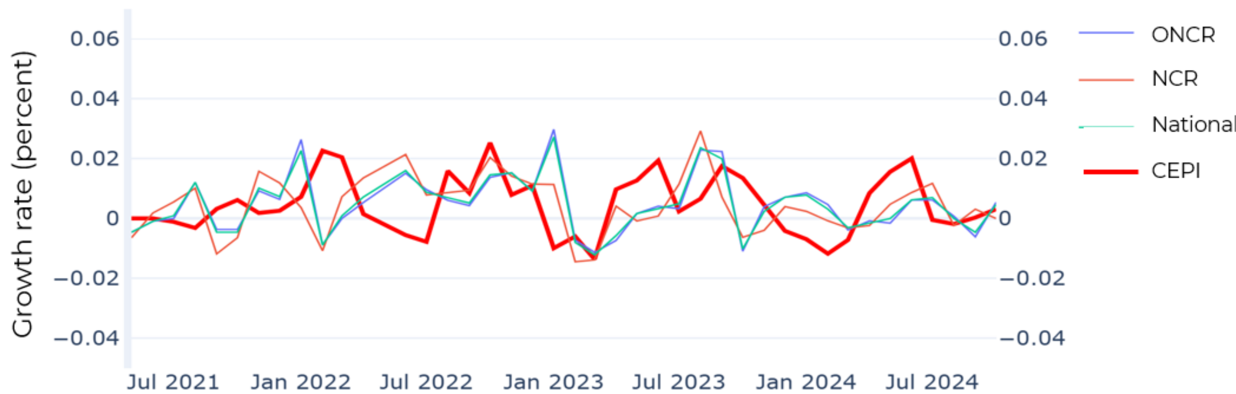
Table 2
CEPI Deviations from the Official Food CPIs

Food Indices	Standard Deviation	Average
National	2.31	4.08
NCR	1.92	3.45
ONCR	2.40	4.21

Source: Bangko Sentral ng Pilipinas staff calculations

The food CEPI also shows a slightly higher average growth rate of 0.0072 and a larger standard deviation of 0.0192, suggesting more volatility in e-commerce food prices. These findings emphasize the importance of including e-commerce data alongside the official food CPI to better understand food price trends.

Figure 2
Official Food CPI vs. CEPI (Monthly Growth Rates)
April 2021 to October 2024



Source: Bangko Sentral ng Pilipinas staff calculations

Table 3
Descriptive Statistics of Official Food CPIs and the CEPI Growth Rates

Measure	National	NCR	AONCR	CEPI
Mean	0.0060	0.0058	0.0060	0.0072
Min	−0.0121	−0.0144	−0.0113	−0.0301
Max	0.0272	0.0293	0.0298	0.0578
Std. Dev.	0.0104	0.0109	0.0108	0.0192

Source: Bangko Sentral ng Pilipinas staff calculations

Machine Learning effectively predicts food price trends with Ridge Regression

The forecasting results show that ridge regression outperforms other algorithms, achieving the highest R-squared value of 0.74 and the lowest Mean Absolute Error (MAE) of 1.269. As seen in Figure 3, ridge regression delivers reliable predictions with minimal error, as confirmed by out-of-sample validation.

Figure 3
Forecasting Results, Official Food CPI, and CEPI
June to October 2024

Source: Bangko Sentral ng Pilipinas staff calculations

Using the best-performing model (ridge regression), the study found that certain products play a key role in predicting overall food price changes. Coffee prices were the most important indicator, contributing about 8.5 percent to the prediction accuracy. Milk prices followed at 5.5 percent, and chocolate at 4.5 percent, with other common food items also contributing to the predictions. This is significant because it shows how modern data analysis can pinpoint which everyday products signal upcoming price changes. By combining different analysis tools, this approach offers a promising way to track prices alongside traditional methods. Expanding the model's data sources, such as incorporating the Department of Trade and Industry's e-Presyo, is expected to enhance the model's accuracy and potentially improve its forecasting reliability.

ENDNOTE:

1/ The authors of this box article are Carmelita G. Esclanda-Lo, Chelsea Anne S. Ong, and Gabriel A. Masangkay. The study has been accepted for publication in the Statistical Journal of the International Association of Official Statistics and will be published by SAGE Journals in the first half of 2025.

Box Article 2:

The Impact of Monetary Policy on Bank Lending Activity in the Philippines[1]

The transmission of monetary policy is important yet a complex subject in monetary economics. It is crucial because, even if monetary policy is well-designed, it holds little value if it fails to reach the broader economy. However, this process is complex due to the multiple transmission channels involved and the incomplete understanding of how these policies affect real economic outcomes (Farinha & Marques, 2001). Additionally, global trends suggest that monetary policy now appears to be less effective than in the past, though the reasons for this decline remain unclear (Kuttner & Mosser, 2002).

Monetary policy affects the economy through several channels, including interest rates, bank lending, exchange rates, and asset prices. The bank lending channel, which is the focus of this article, plays a key role in transmitting monetary policy by influencing supply of bank loans. This occurs when (1) banks cannot fully offset changes in reserves with alternative funding due to limited substitutability of deposits (Kashyap & Stein, 2000; Stein, 1988), and (2) certain borrowers, like households and small and medium enterprises, rely on bank loans, as capital markets are not possible alternatives for them.

It is essential to note that the relationship between monetary policy and bank lending depends on the degree to which different sources of credit are substitutable. The strength of the bank lending channel is therefore crucial for understanding how monetary policy impacts the economy. Consequently, determining how banks respond to policy changes is important for policymakers (Kahn, 1991).

This box article examines the existence and strength of the bank lending channel in the Philippines. The article focuses on asymmetric effects during accommodative and restrictive monetary policy periods and on the types of banking activities. Building on the Kashyap and Stein (2000) model, a two-step least squares regression model was applied to data from 34 universal and commercial banks (UKBs) from Q1 2008–Q2 2023. Banks were categorized by asset size to assess differential impacts. The analysis was segmented into restrictive and accommodative monetary policy periods.

There are three main hypotheses: (1) bank lending in the Philippines increases (decreases) as the monetary policy of the Bangko Sentral eases (tightens), with the effect being strongest for small banks; (2) the impact of monetary policy may be asymmetric, being significant only during restrictive periods and not during accommodative periods, or vice versa; and (3) the effect may be more pronounced for UKBs, which focus more on lending activities.

Results suggest that monetary policy has an asymmetric effect on lending activity

Table 1 presents regression results for bank lending sensitivity to the reverse repurchase (RRP) rate or policy rate across different bank asset sizes during a specified period as well as during accommodative and tightening periods. Using a 95-percent confidence level, ϕ, which is the coefficient that measures the responsiveness of lending to changes in the RRP rate, was analyzed across different bank size categories to understand how each group adjusts its lending behavior in response to fluctuations in the RRP rate.

Table 1. Results of Two-Step Least Squares Regression Test

Φ*	B ≥ ₱350 billion	*t-stat*	₱150 billion ≤ B < ₱350 billion	*t-stat*	₱70 billion ≤ B < ₱150 billion	*t-stat*	₱35 billion ≤ B < ₱70 billion	*t-stat*	B < ₱35 billion	*t-stat*
All monetary policy periods										
	-0.002	*-0.167*	0.010	*0.259*	0.028	*0.726*	0.030	*0.589*	-0.077	*-0.929*
Accommodative period										
	0.014	*0.332*	0.036	*0.249*	0.159	*1.099*	0.008	*0.076*	0.110	*0.300*
Tightening period										
	-0.020	*-0.707*	-0.063	*-1.092*	-0.034	*-0.663*	0.216	*1.937*	-0.144	*-2.457*

**Coefficient of monetary policy that measures the responsiveness of lending to changes in the reverse repurchase (RRP) rate or policy rate*
Sources: Bangko Sentral ng Pilipinas data and authors' computations

The findings indicate that monetary policy has an asymmetric effect on lending activity. Restrictive monetary policy reduces lending, particularly for smaller banks, while accommodative policy does not lead to a corresponding increase in lending.

During easing period, none of the bank size categories show a statistically significant response to RRP rate cuts. This reveals the limitations of the bank lending channel in transmitting accommodative monetary policy to stimulate lending. Larger banks are buffered by diversified funding, while smaller banks maintain a cautious lending stance, both of which contribute to a muted response across the sector.

Meanwhile, during tightening periods, results show a pattern of mixed sensitivity across bank size categories, with only the smallest banks displaying statistically significant responsiveness to RRP rate changes at the 95-percent confidence level. This suggests that smallest banks reduce lending in response to higher policy rates.

- The smallest banks (B < ₱35 billion) exhibit a statistically significant negative ϕ value, indicating a meaningful reduction in lending in response to RRP rate increases. This result underscores the vulnerability of smaller banks to policy rate hikes, as they are more reliant on deposits and may lack alternative funding sources. Higher policy rates likely translate to a direct impact on their liquidity and credit supply, resulting in a contraction in lending.

- The largest, large, and mid-sized banks (B ≥ ₱35 billion) do not significantly adjust their lending in response to tightening policy. These institutions likely have diversified funding strategies and strong liquidity management practices, allowing them to maintain lending stability regardless of RRP rate increases.

These findings suggest that the bank lending channel of monetary policy is relatively weaker for larger banks but more pronounced for the smallest banks. The limited responsiveness of larger institutions may dilute the effectiveness of monetary policy in influencing aggregate lending. However, the sensitivity of the smallest banks indicates that policy rate increases could still have a contractionary effect on credit supply, particularly for borrowers who depend on smaller financial institutions.

Policy tightening has stronger impact on credit supply in smaller Philippine banks

Monetary policy affects the lending activity of UKBs in the Philippines, but its impact is asymmetric. Transmission occurs during restrictive periods but is weak during accommodative ones.

This asymmetry aligns with Blyth's (2012) "pushing on a string" analogy—while higher interest rates tighten credit conditions and restrain activity, lower rates do not always stimulate lending. Banks may limit lending due to risk concerns, and borrowers may hesitate amid economic uncertainty.

Barnichon et al. (2017) suggest three reasons for this asymmetry: (1) behavior of lender and borrower—when a central bank hikes policy rate, banks generally pass on rate hikes but may restrict lending to borrowers (i.e., credit rationing) rather than risk of having defaults. Meanwhile lower policy rates do not necessarily result in increased borrowing if there is no demand for additional credit given economic conditions; (2) sticky prices—firms reduce output under tight policy but adjust prices instead during expansion; and (3) consumer outlook—economic downturns trigger stronger pessimism on consumers and firms than optimism during booms.

In the Philippines, policy tightening impacts credit supply mainly in smaller institutions, while larger banks remain less affected. To influence aggregate credit growth, the BSP may need to employ complementary tools targeting smaller banks to enhance monetary policy transmission, especially if the goal is to curb lending across the entire banking sector.

ENDNOTE

1/ This article was written by Ms. Carolina Austria Escranda, Ph.D. is a Principal Researcher at the Bangko Sentral ng Pilipinas (BSP) Research Academy and Ms. Bernadette Marie Bondoc-Quiban is a Bank Officer V at the Department of Economic Research. A full version of this study is published in the 2024 BSP Discussion Paper Series. https://www.bsp.gov.ph/Sites/researchsite/Publications/BSP-Discussion-Papers/DP202424.pdf

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