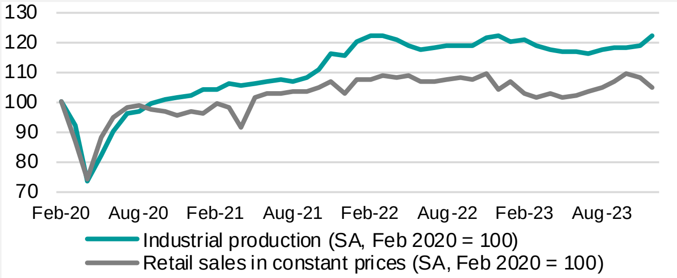
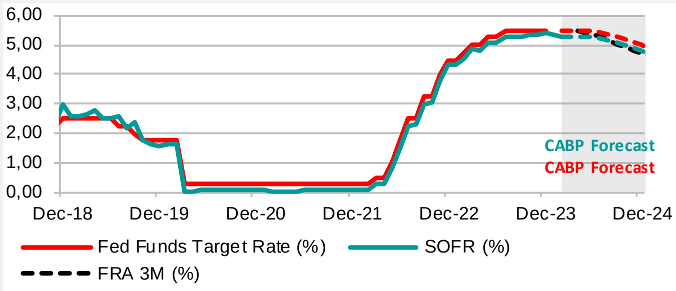
Who stands to gain and who stands to lose from the AI technology shock?

This week



Source: GUS, Credit Agricole

- **The key event this week will be the release of Poland's industrial production figures for January scheduled for Tuesday.** We forecast that growth in industrial production picked up to 1.0% YoY from -3.9% in December. The growth resulted from the combination of favourable calendar effects and a downturn in the industrial manufacturing sector that had the opposite impact. Our industrial production growth forecast is below market consensus (3.1%), thus, its materialisation would be slightly negative for the PLN and yields on Polish bonds.
- **Another important event will be the release of Poland's retail sales figures on Thursday.** We expect the growth in sales expressed in current prices to have increased to 1.0% YoY in January vs. -2.3% in December. Consumer sentiment had improved, and drove the sales growth up. Our forecast for the real retail sales growth is close to the market consensus (1.4%), and if it materialises, it will be neutral for the PLN and yields on Polish bonds.
- **Thursday will see the publication of business survey results for key Eurozone economies.** The market expects a rise in the Eurozone's composite PMI to 48.5 pts in February from 47.9 pts in January. Despite a slight upturn, the index representing the activity in the Eurozone will remain below the 50-point mark that separates growth from contraction. At the same time, investors are expecting a slight increase in German manufacturing PMI (to 46.4 pts in February from 45.5 pts in January). Friday will see the release of the Ifo index, reflecting the sentiment of German businesses in the manufacturing, construction, trade, and services sectors. The market expects the index to have risen to 85.5 pts in February from 85.2 pts in January. We believe that the release of Eurozone business survey results will be neutral for financial markets.

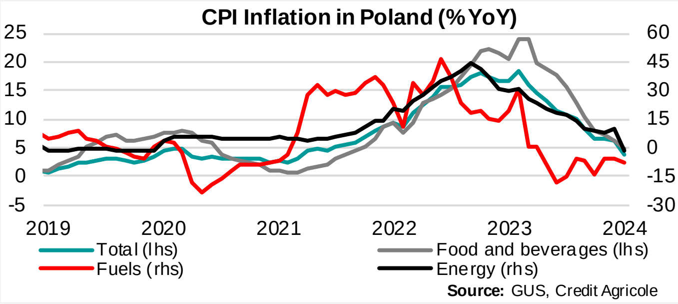


Source: Refinitiv, Credit Agricole

- ***Minutes* from the January FOMC meeting are planned to be published this Wednesday.** Information on differences between individual Fed members' expectations concerning the monetary policy in the months to come will be an important topic in the *Minutes*. Given higher-than-expected inflation figures for January (see below), some of the Fed members' opinions quoted in the *Minutes* may have become outdated. It should be noted at this point that the press release published after the last meeting contained a passage saying that the FOMC members do not think it would be appropriate to cut the rates before they have become quite convinced that inflation is getting closer to the inflation target. We still believe that the Federal Reserve will cut the interest rates in Q3 and Q4, each time by 25bp. However, we think there is a risk that the monetary policy easing cycle in the US might start earlier. We believe that the publication of *Minutes* will be conducive to an increased volatility on the financial markets.
- **Data on employment and average wages in the Polish enterprise sector for January will be published on Tuesday.** The GUS will carry out the annual revision of the number of employees in micro-enterprises (companies employing less than 10 people), which will result in an increase in the number of employees in companies employing at least 10 people on a month-to-month basis. We believe that the scale of the revision will be smaller than in 2023. Consequently, we expect the employment growth rate to have dropped from -0.1% YoY in December 2023 to

-0.4% in January 2024, and the average wage growth rate to have increased from 9.6% YoY in December to 10.5% YoY in January due to base effects. We believe that the release of data on employment and the average wage in the business sector will be neutral for the PLN and the debt market.

Last week

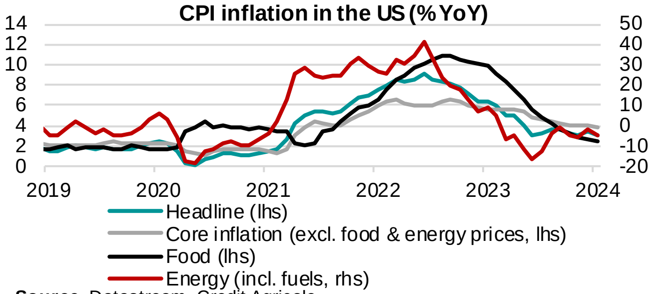


- **CPI inflation in Poland fell from 6.2% YoY in December 2023 to 3.9% YoY in January 2024, running below the market consensus that was consistent with our forecast (4.1%).** Data on January inflation is incomplete yet, and it is only preliminary due to the annual revision of weights in the inflation basket. Thus, the possibility of drawing conclusions based on data is limited. Complete data on price growth in individual categories in January and February 2024 including the revised inflation index for January will be published in March. Inflation was driven down by a slower price growth in all main categories: "food and non-alcoholic beverages" (4.9% YoY in January vs. 6.0% in December), "energy" (-2.1% vs. 9.8%), "fuels" (-8.1% vs. -6.0%) and by lower core inflation, which we estimate to have fallen from 6.9% YoY in December to 6.4% in January. We expect core inflation to have run at 0.5% MoM in January, which would mean that it remains above its seasonal pattern (ca. -0.1%). In our opinion, it indicates that the elevated inflationary pressure still persists in the Polish economy. It is also worth noting that the relatively strong MoM core inflation rise in January resulted to a substantial extent from annual pricelist revisions carried out by many companies. This makes us believe that the MoM growth in core prices will slow down in the months to come, though it will remain above its seasonal pattern (see MACROpulse of 15/02/2024). We forecast inflation to keep on falling in the months to come to reach its local minimum at 2.3% in Q2 2024. We expect the inflation to start rising gradually from Q3 2024 onwards, reach a local peak of 4.8% YoY in Q2 2025, and then fall to 3.5% in Q4 2025. Consequently, in our scenario the headline inflation will fall below the inflation target of 2.5% YoY and stay there between March and May 2024 (see MACROmap of 15/01/2024). Taking into consideration recent statements made by the NBP Governor A. Glapiński, we can see a significant upside risk for our scenario, in which inflation falling temporarily below the inflation target will make the MPC cut interest rates twice, in March and July 2024, each time by 25bp.
- **The Polish current account balance fell to EUR -24m in December, down from EUR 1,203 in November, exceeding market expectations (EUR -250m) but falling short of our forecast (EUR 332m).** Thus, Poland recorded a current account deficit for the first time since April 2023. The decrease in the current account balance followed from lower trade in goods and secondary income account balances (down by EUR 782m and EUR 871m from November, respectively). In contrast, the increased balances of services and secondary incomes accounts (up by EUR 328m and EUR 98m from November, respectively) had the opposite effect. Additionally, December saw a downturn in exports growth (-6.0% YoY in December vs. -1.9% in November) and imports growth (-11.3% vs. -7.8%), with the negative trend driven by adverse calendar effects in December. In its press release, the National Bank of Poland (NBP) reported a widespread decline in exports across all major categories. For consumer goods, the NBP noted a further decline in exports of household appliances, furniture, and TV sets. The press release also highlighted mixed trends in the automotive sector's exports, with an increase in sales of delivery vans, tractor units and passenger cars, but a decrease in exports of automotive parts, the main export category for

the sector. Furthermore, the press release also noted that a significant factor contributing to the decline in the value of imports was the reduction in fuel prices. It also pointed out that the observed decrease in imports of intermediate and investment goods is largely due to diminished demand for goods manufactured in Poland. We estimate that the cumulative current account balance for the last 4 quarters in relation to GDP increased to 1.6% in Q4 2023 compared with 1.3% in Q3 2023.

- **In accordance with a flash estimate, GDP growth in Poland accelerated to 1.0% YoY in Q4 vs. 0.5% YoY in Q3, running below market consensus (1.1%) and in line with our forecast.** Seasonally-adjusted quarterly GDP growth slowed to 0.0% in Q4 from 1.1% in Q3. It is worth noting that GUS has revised the seasonally-adjusted data for previous quarters quite significantly. The revised data is indicative of a slight decline in the seasonally-adjusted GDP growth in Q2 2023 (by 0.1% QoQ). Previously, the data had been showing an uninterrupted growth in activity in the Polish economy from Q1 2023 onwards. The data published by the GUS is a flash estimate and the full GDP data including information on its structure will be published at the end of the month. Nonetheless, based on the earlier data for the entire 2023, we believe that economic growth between Q3 and Q4 was driven up primarily by higher contributions coming from inventories and investments. At the same time, we think that the contribution of private consumption was still low due to a delay in its recovery. We expect the GDP growth to keep on accelerating gradually in the quarters to come (see MACROmap of 05/02/2024). Consequently, we expect the Polish GDP to grow by 2.8% YoY in 2024 vs. +0.2% in 2023.
- **In accordance with the second estimate, quarterly GDP growth in the Eurozone accelerated from -0.1% in Q3 to 0.0% in Q4 (no changes vs. the first estimate).** YoY GDP growth in the Eurozone went up from 0.0% in Q3 to 0.1% in Q4. As regards the main economies, the quarterly GDP growth slowed down in Germany (-0.3% QoQ in Q4 vs. 0.0% in Q3). It accelerated in Spain (0.6% in Q4 vs. 0.4% in Q3) and Italy (0.2% vs. 0.1%), but stayed on the same level in France (0.0% in Q3 and Q4). This is just preliminary data, and it contains no information about the economic growth structure. Given the business survey results for January (see MACROmap of 29/01/2024), we can see a substantial downside risk to our scenario in which the quarterly GDP growth in the Eurozone is to stand at 0.2% in Q1 2024.
- **Last week, important US data was published.** CPI inflation in January fell to 3.1% YoY compared to 3.4% in December, exceeding both the consensus (2.9%) and our forecast (3.0%). The inflation decrease was driven by the lower price growth of energy and food, with core inflation remaining stable in January compared to December at 3.9% (the consensus anticipated a drop to 3.7%). The factors holding back the reduction in core inflation included a revision of the inflation basket weights, increasing the proportion of categories that saw significant price rises last year, alongside persistent high price growth in the "housing" and "health" categories. Last week also saw the release of data on industrial production which fell to -0.1% MoM, down from 0.0% in December, performing well below market expectations (0.3%). This drop was attributable to a lower production growth in manufacturing and construction, with a higher growth in the output of utilities, primarily driven by the colder winter, having the opposite effect. The capacity utilisation rate dropped in January to 78.5% from 78.7% in December, marking the lowest level since September 2021, suggesting a decline in US industrial activity. Last week retail sales data was also released, showing a decrease in nominal monthly growth to -0.8% MoM in January compared with 0.4% in December, a reading well below market expectations of -0.1%. Excluding autos, retail sales fell by 0.6% in January compared with a growth of 0.4% in December. The retail sales decline was widespread across

CPI inflation in the US (% YoY)



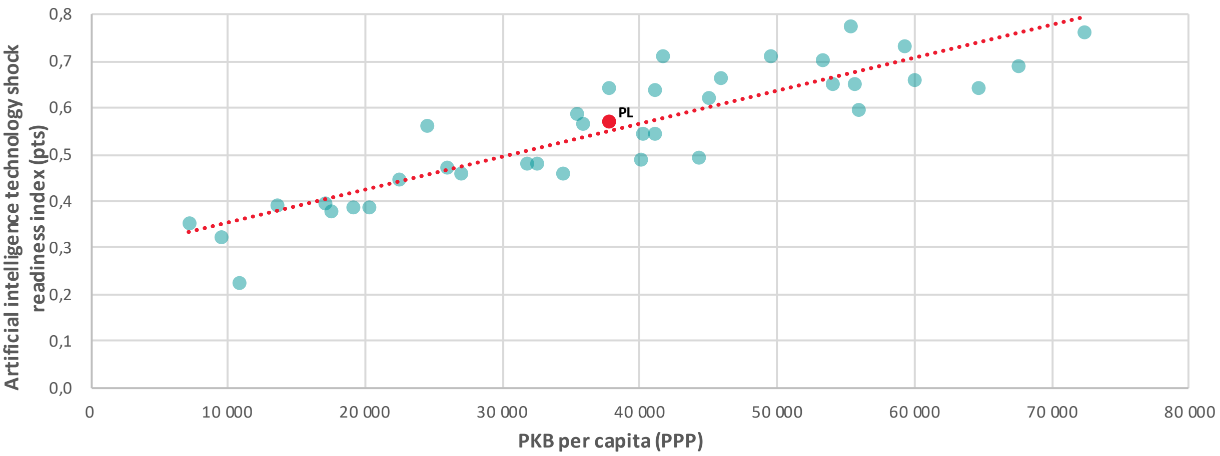
Source: Datastream, Credit Agricole

most categories. While the data signal a weakening consumer demand, in our opinion, it is not as sharp as the January figures might suggest. Notably, adverse weather conditions significantly negatively impacted January sales. Moreover, the data reflect nominal prices, thus capturing the decrease in basic goods prices in January (by 0.3% MoM). We anticipate a further, gradual weakening of consumer demand in the upcoming quarters. Last week, data on building permits (1,470 in January vs. 1,493 in December) and housing starts (1,331 vs. 1,562) was published, showing a slight slowdown in activity on the US real property market. Last week also brought the release of business climate surveys, revealing an improvement of sentiment in manufacturing, as indicated by regional survey results: the NY Empire State index (-2.4 pts in February vs. -43.7 pts in January) and the Philadelphia Fed (5.2 pts vs. -10.6 pts). In contrast, the preliminary University of Michigan index expanded to 79.6 pts compared with 79.0 pts in December, outperforming market expectation of 80.0 pts. Thus, the index reached its highest point since July 2021, growing on the back of an improved reading of its business expectations component, with the perception of the current business situation component having the opposite effect. Accompanying the University of Michigan index, the median expected inflation over a 1-year horizon for February rose to 3.0% YoY from 2.9% in January, indicating persistently elevated inflation expectations among US households. In line with our scenario, the annualised pace of GDP growth in the US is projected to slow in Q1 2024 to 1.3% from 3.3% in Q4 2023.

Who stands to gain and who stands to lose from the AI technology shock?

In the MACROmap of 12/02/2024, we developed a metric to assess countries' abilities to reap benefits from the implementation of artificial intelligence (AI). This analysis aims to compare this metric with the current levels of economic development across various countries to determine who is likely to benefit and who might lose from the AI technological shock within the next decade.

In summary, our scenarios assume that both the advancement of AI and the adoption of AI solutions will progress gradually in the coming years. This aligns with the current scientific consensus that AI will not surpass human intelligence within the next decade (see MACROmap of 29/01/2024).



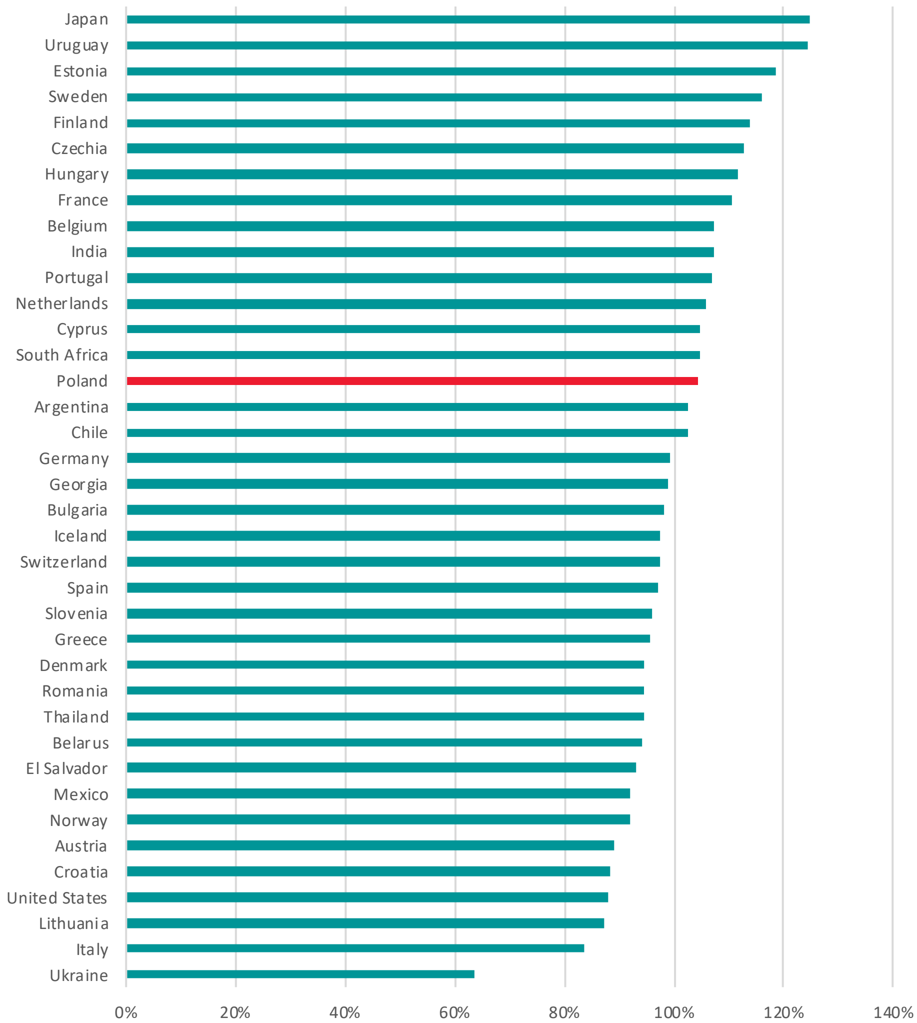
Source: World Bank, Credit Agricole
Countries such as Luxembourg, Ireland, Singapore and Qatar were excluded from the analysis due to their artificially high GDP per capita

To evaluate how various countries might benefit from the evolution of AI, we compared our newly developed AI technology shock readiness index with the GDP per capita at purchasing power parity of the countries under review. As outlined in last week's MACROmap, our index considers factors such as digital infrastructure, human capital, demographics, integration with global IT service supply chains, and the regulatory landscape (see MACROmap of 12/02/2024). The findings corroborate intuitive and empirical research insights: the higher a country's economic development level, the better it is prepared for an AI technology shock.

It is important to highlight the deviation of some countries from the expected trend line, which can be interpreted as follows: countries above the trend line are better prepared than their level of economic development would suggest. This indicates that AI implementation could expedite their convergence to wealthier countries (for developing economies) or expand their lead over developing economies (for developed economies). Conversely, countries below the trend line exhibit a readiness level for the AI technology shock lower than their wealth levels would imply. This suggests that AI development could slow their convergence process (for developing economies) or reduce their advantage over developing economies (for developed economies).

To identify which economies stand to gain or lose the most from an AI technology shock, we calculated hypothetical readiness index values based on current GDP per capita levels. By calculating the ratio of actual to hypothetical index values and multiplying by 100%, we constructed an AI implementation premium index. The interpretation of this index is straightforward: a value of 110% indicates that a country's potential to benefit from the AI technological shock is 10% higher than what its wealth level would imply.

Artificial intelligence implementation premium index (%)



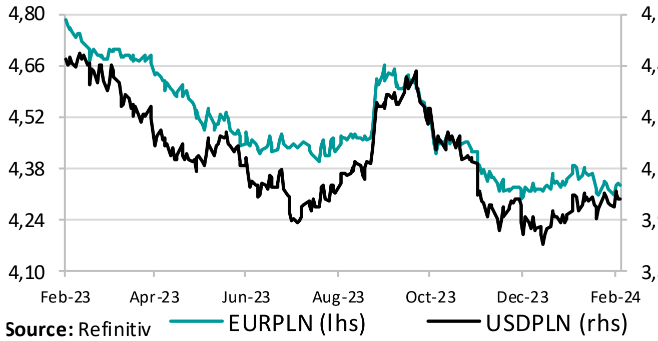
Source: World Bank, Credit Agricole

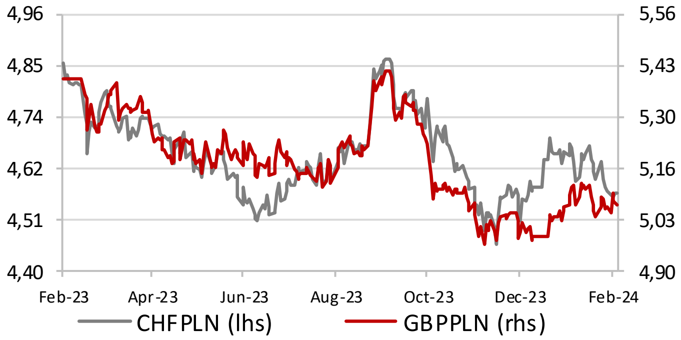
Our findings suggest that Poland, among others, has the opportunity to benefit marginally more from AI development than its economic development level would suggest. Other CEE countries, like Hungary and the Czech Republic, also stand to accelerate their convergence due to the evolution of AI. We believe that the high rank of these countries stems from observed discrepancies between human capital and wealth levels. In contrast, countries such as the USA, Switzerland, and Germany rank lower. This is because the advantages of these nations in areas crucial to the effective implementation of AI (e.g. human capital, digital infrastructure) over other countries in the sample are typically lower than their wealth levels would imply. Furthermore, these economies commonly face demographic challenges, notably a high proportion of older workers, who, as literature suggests, are less adaptable and less likely to benefit from an AI technology shock (see MACROmap of 12/02/2024).

Our analysis aligns with research indicating that more developed countries are generally better positioned to leverage the AI technology shock than their less wealthy counterparts, potentially leading to divergence and widening the developmental divide between the "wealthy North" and the "poor South," as corroborated by studies, including those by the IMF (2024). Nevertheless, individual economic traits mean that countries with similar wealth levels could experience varying degrees of benefit from AI technological shocks. Our findings indicate a potential for Poland to modestly hasten its convergence to the wealthier EU countries through AI development.

Domestic industrial production data may weaken PLN

FX rates





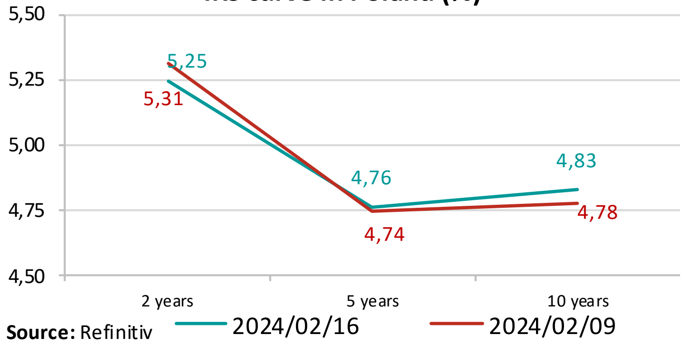
Source: Refinitiv

Last week, the EURPLN exchange rate rose to 4.3373 (weakening of the PLN by 0.4%). Monday saw a slight appreciation of the PLN, a continuation of the trends observed two weeks ago (see MACROmap of 12/02/2024). On Tuesday, the trend reversed and the EURPLN rate rallied following the strengthening of the USD against the EUR, driven by the publication of higher-than-expected US inflation data. The release of lower-than-expected domestic inflation data did not significantly impact the market.

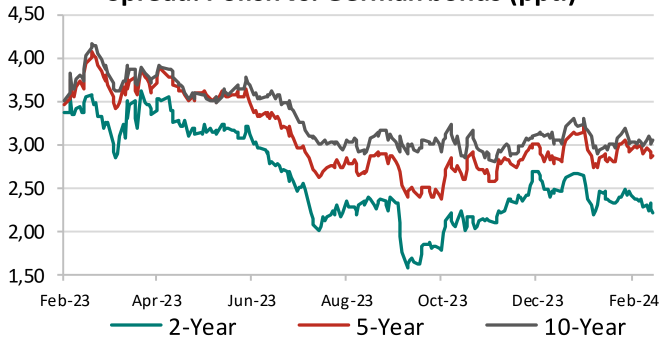
This week, the release of domestic industrial production data scheduled for Tuesday will be key for the PLN. If our forecast, which is below the consensus, materialises, the data might have a slightly negative impact on the Polish currency. On the other hand, the publication of the Minutes from the January FOMC minutes scheduled for Wednesday may add to the volatility of the PLN. We believe that other economic data releases scheduled for this week, both from Poland and the global economy, will have a neutral impact on the PLN exchange rate.

Publication of FOMC Minutes may add to IRS rate volatility

IRS curve in Poland (%)



Spread: Polish vs. German bonds (ppt.)



Source: Refinitiv

Last week, 2-year IRS rates decreased to 5.25 (down by 6bp), and 5-year increased to 4.76 (up by 2bp) and 10-year to 4.83 (up by 5bp). Last week saw a sharp drop in IRS rates following the core markets, with the bulk of the decrease happening on Wednesday and Thursday morning amidst heightened expectations for interest rate cuts by key central banks. However, a correction and an uptick in IRS rates occurred in the latter half of Thursday and on Friday. The release of lower-than-expected domestic inflation data did not significantly impact the curve.

This week, the release of domestic industrial production data scheduled for Tuesday will be key for the IRS rates and, in our opinion, may lead to a drop in IRS rates. On the other hand, the publication of the Minutes from the January FOMC minutes scheduled for Wednesday may add to the volatility of the market. We believe that other economic data releases from Polish and the global economy scheduled for this week will have a neutral impact on IRS rates.

Forecasts of the monthly macroeconomic indicators

Main monthly macroeconomic indicators in Poland														
Indicator	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24
NBP reference rate (%)	6,75	6,75	6,75	6,75	6,75	6,75	6,75	6,75	6,00	5,75	5,75	5,75	5,75	5,75
EURPLN*	4,71	4,70	4,68	4,59	4,53	4,43	4,40	4,47	4,63	4,45	4,35	4,33	4,32	**4,35**
USDPLN*	4,33	4,45	4,31	4,16	4,23	4,06	4,00	4,12	4,37	4,21	4,00	3,93	4,00	**4,04**
CHFPLN*	4,70	4,72	4,71	4,66	4,64	4,52	4,59	4,66	4,78	4,62	4,56	4,64	4,64	**4,58**
CPI inflation (% YoY)	16,6	18,4	16,1	14,7	13,0	11,5	10,8	10,1	8,2	6,6	6,6	6,2	3,9	
Core inflation (% YoY)	11,7	12,0	12,3	12,2	11,5	11,1	10,6	10,0	8,4	8,0	7,3	6,9	**6,4**	
Industrial production (% YoY)	1,8	-1,0	-3,1	-6,0	-2,8	-1,1	-2,3	-1,9	-3,3	1,9	-0,3	-3,9	**1,0**	
PPI inflation (% YoY)	20,1	18,2	10,3	6,2	2,8	0,3	-2,1	-2,9	-2,7	-4,2	-5,1	-6,4	**-8,3**	
Retail sales (% YoY)	15,1	10,8	4,8	3,4	1,8	2,1	2,1	3,1	3,6	4,8	2,6	0,5	**3,6**	
Corporate sector wages (% YoY)	13,5	13,6	12,6	12,1	12,2	11,9	10,4	11,9	10,3	12,8	11,8	9,6	**10,5**	
Employment (% YoY)	1,1	0,8	0,5	0,4	0,4	0,2	0,1	0,0	0,0	-0,1	-0,2	-0,1	**-0,4**	
Unemployment rate* (%)	5,5	5,6	5,4	5,3	5,1	5,1	5,0	5,0	5,0	5,0	5,0	5,1	**5,4**	
Current account (M EUR)	2246	1467	1372	-230	589	1272	157	556	1176	2119	1203	-24		
Exports (% YoY EUR)	19,2	14,8	16,1	1,8	4,3	4,0	0,0	-2,3	-4,2	2,3	-1,9	-6,0		
Imports (% YoY EUR)	10,4	-1,6	3,3	-9,6	-5,0	-5,8	-7,4	-11,9	-14,7	-7,7	-7,8	-11,3		

*end of period

Forecasts of the quarterly macroeconomic indicators

Main macroeconomic indicators in Poland											
Indicator	2023				2024				2023	2024	2025
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Gross Domestic Product (% YoY)	-0,3	-0,6	0,5	1,0	1,5	2,8	3,1	3,5	0,2	2,8	3,5
Private consumption (% YoY)	-2,0	-2,8	0,8	-0,1	2,0	4,0	4,3	4,5	-1,0	3,7	3,5
Gross fixed capital formation (% YoY)	6,8	10,5	7,2	7,6	3,0	2,2	2,4	1,2	8,0	2,0	8,8
Export - constant prices (% YoY)	3,8	-3,2	-11,0	-5,8	1,0	3,8	5,3	6,0	-4,3	4,0	5,5
Import - constant prices (% YoY)	-3,2	-6,8	-20,3	-13,3	4,6	6,5	7,1	8,2	-11,2	6,6	7,0
GDP growth contributions: Private consumption (pp)	-1,3	-1,6	0,5	-0,1	1,2	2,3	2,5	2,2	-0,8	2,1	2,0
GDP growth contributions: Investments (pp)	0,9	1,5	1,2	1,7	0,4	0,3	0,4	0,3	1,8	0,4	1,5
GDP growth contributions: Net exports (pp)	4,6	2,1	5,9	4,3	-2,0	-1,2	-0,6	-0,7	5,4	-1,1	-0,5
Current account (% of GDP)***	-0,7	0,0	1,0	1,6	1,0	0,5	-0,3	-1,0	1,6	-1,0	-0,5
Unemployment rate (%)**	5,4	5,1	5,0	5,1	5,2	4,9	4,8	5,0	5,1	5,0	5,0
Non-agricultural employment (% YoY)	1,5	1,1	1,4	0,7	0,0	-0,5	-0,6	-1,0	1,2	-0,5	-0,5
Wages in national economy (% YoY)	14,3	13,8	11,0	12,0	9,5	12,0	11,3	11,5	12,8	11,1	8,0
CPI Inflation (% YoY)*	17,0	13,1	9,7	6,5	3,2	2,3	4,2	4,2	11,6	3,5	4,0
Wibor 3M (%)**	6,89	6,90	5,77	5,88	5,63	5,38	5,38	5,38	5,88	5,38	4,88
NBP reference rate (%)**	6,75	6,75	6,00	5,75	5,50	5,50	5,25	5,25	5,75	5,25	4,75
EURPLN**	4,68	4,43	4,63	4,33	4,42	4,40	4,38	4,36	4,33	4,36	4,32
USDPLN**	4,31	4,06	4,37	3,93	4,09	4,11	4,13	4,15	3,93	4,15	3,86

* quarterly average
** end of period
***cumulative for the last 4 quarters

Calendar

TIME	COUNTRY	INDICATOR	PERIOD	PREV. VALUE	FORECAST*	
					CA	CONSENSUS**
		Tuesday 02/20/2024				
10:00	Eurozone	Current account (bn EUR)	Dec	24,6		
10:00	**Poland**	**PPI (% YoY)**	**Jan**	**-6,4**	**-8,3**	**-8,3**
10:00	**Poland**	**Corporate sector wages (% YoY)**	**Jan**	**9,6**	**10,5**	**11,0**
10:00	**Poland**	**Employment (% YoY)**	**Jan**	**-0,1**	**-0,4**	**-0,2**
10:00	**Poland**	**Industrial production (% YoY)**	**Jan**	**-3,9**	**1,0**	**3,1**
		Wednesday 02/21/2024				
16:00	Eurozone	Consumer Confidence Index (pts)	Feb	-16,1		-15,6
20:00	USA	FOMC Minutes	Jan			
		Thursday 02/22/2024				
9:30	Germany	Flash Manufacturing PMI (pts)	Feb	45,5		46,1
10:00	**Poland**	**Retail sales - current prices(% YoY)**	**Jan**	**0,5**	**3,6**	**3,5**
10:00	**Poland**	**Retail sales - constant prices (% YoY)**	**Jan**	**-2,3**	**1,0**	**1,4**
10:00	Eurozone	Flash Services PMI (pts)	Feb	48,4		48,7
10:00	Eurozone	Flash Manufacturing PMI (pts)	Feb	46,6		47,1
10:00	Eurozone	Flash Composite PMI (pts)	Feb	47,9		48,5
11:00	Eurozone	HICP (% YoY)	Jan	2,9	2,8	2,8
14:00	**Poland**	**M3 money supply (% YoY)**	**Jan**	**8,5**	**7,9**	**7,9**
15:45	USA	Flash Manufacturing PMI (pts)	Feb	50,7		50,2
16:00	USA	Existing home sales (M MoM)	Jan	3,78	3,93	3,95
		Friday 02/23/2024				
8:00	Germany	Final GDP (% QoQ)	Q4	0,0	-0,3	-0,3
10:00	**Poland**	**Registered unemplyment rate (%)**	**Jan**	**5,1**	**5,4**	**5,4**
10:00	Germany	Ifo business climate (pts)	Feb	85,2		85,5

*The forecasts of macroeconomic indicators for Poland were prepared by Credit Agricole Bank Polska S.A. The forecasts of foreign indicators were prepared by Crédit Agricole Corporate and Investment Bank

** Refinitiv

MACRO MAP

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