INTERNATIONAL MONETARY FUND

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REPUBLIC OF POLAND

SELECTED ISSUES

January 2025

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REPUBLIC OF POLAND

SELECTED ISSUES

December 16, 2024

Approved By
European Department

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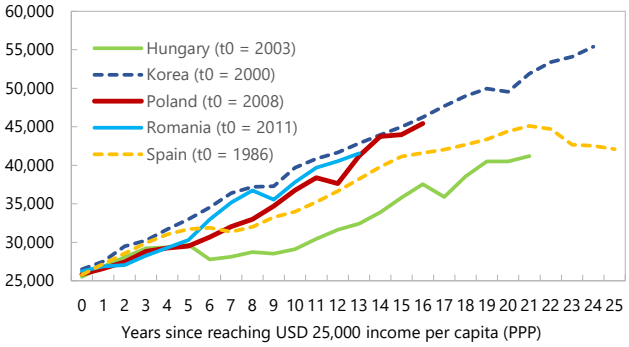
CONTENTS

POTENTIAL GROWTH IN POLAND

A. Poland's Convergence Success

1. Poland has achieved substantial economic convergence within the EU. The economy has roughly doubled in size over the last two decades. Real GDP per capita over the same period has increased from just under 50 percent of the EU27 average to 80 percent. The speed of convergence has been one of the fastest historically for an economy of its size, now the 20th largest in the world in real terms and 5th largest in the EU. Poland has been classified as a high-income country by the World Bank and has closed substantial distance to many advanced EU countries. We examine three interconnected ways to explain this convergence success: rising labor productivity coupled with a robust labor supply, capital deepening from a relatively shallow base coupled with high total factor productivity growth, and strong EU trade and institutional linkages helping accelerate adoption of technologies and raise income via exports.

GDP Per Capita After Reaching 25,000 Income Per Capita
(2021 USD, PPP-adjusted)



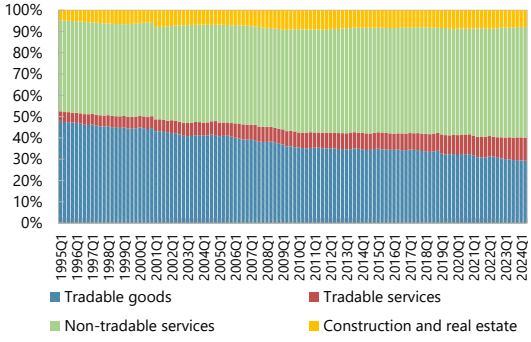
Sources: IMF, World Economic Outlook; and IMF staff calculations.

Robust Labor Productivity and Labor Supply

2. Labor productivity growth was robust until the disruptions from COVID. Using detailed sector-level data, aggregate labor productivity growth is decomposed into an intra-industry productivity growth effect, a structural shift effect (changes in labor shares), and an interaction effect (Fabricant, 1942; McMillan et al., 2014; de Vries et al., 2013; IMF 2015, IMF 2024). The decomposition exercise indicates that both structural transformation and within-sector productivity growth contributed to aggregate labor productivity growth, with productivity growth within the non-tradable service sector being the largest contributor. The disruptions of activity following COVID together have contributed more recently to volatility.

- **Structural transformation continued to support productivity growth over the last decade** (Text Figure 1, right panel)**.** The economy has undergone structural transformation since Poland joining the EU, which contributed about one-fifth of labor productivity growth from 2004-2013 (IMF 2015). Such sectoral shifts continued in the second decade of its EU membership, with labor moving from less-productive tradable

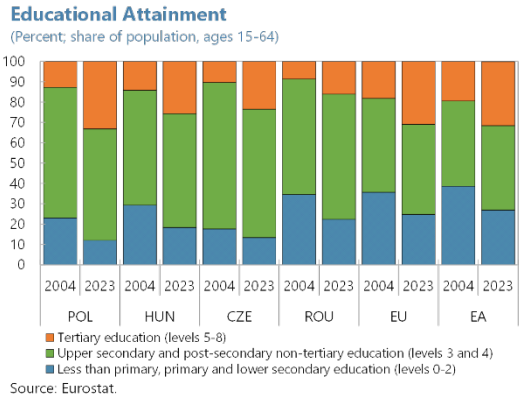
Employment Shares
(Percent)



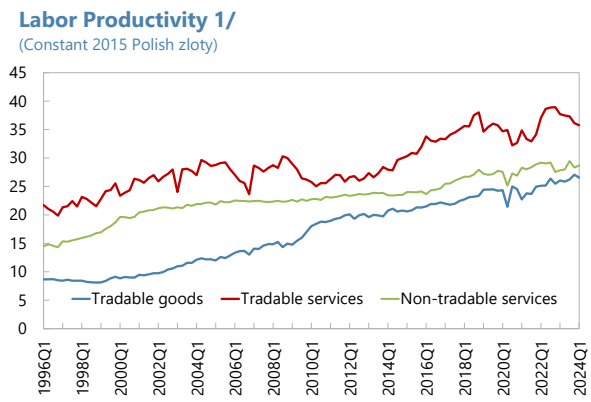
Sources: Eurostat; Haver Analytics; and IMF staff calculations.

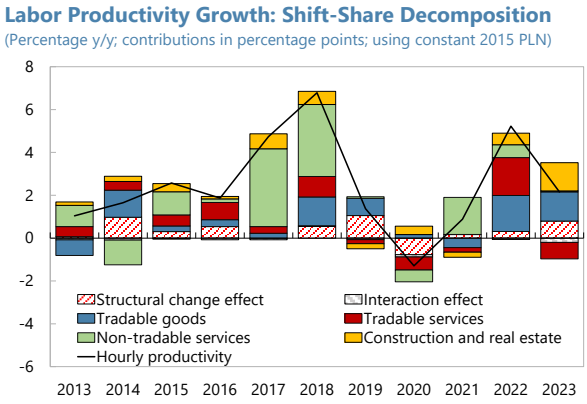
goods to more productive tradable and non-tradable services. Services, both non-tradable and tradable, now make up about 70 percent of the economy.

- **Within-sector productivity growth was a major driver of aggregate labor productivity growth** (Text Figure 1, left panel)**.** Productivity growth within sectors point to also broad-based productivity gains, which may be explained in part by strengthening human capital on the back of strong education outcomes. Productivity growth in the non-tradable services sector was the largest contributor to aggregate labor productivity growth, helping stem real exchange rate appreciation pressures from the Balassa-Samuelson effect, until COVID disrupted demand. Post-pandemic normalization led to a rebound in productivity growth in tradable goods and a rebalancing of sectoral demand. More recently, labor hoarding may have resulted in slowing productivity growth.



Text Figure 1. Labor Productivity Growth

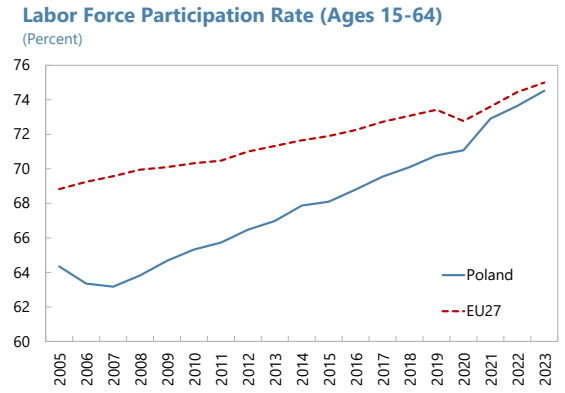


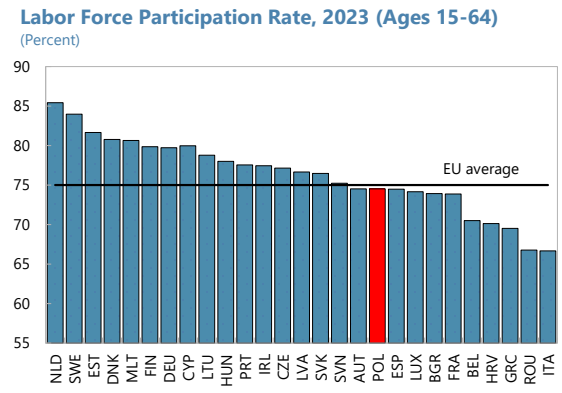


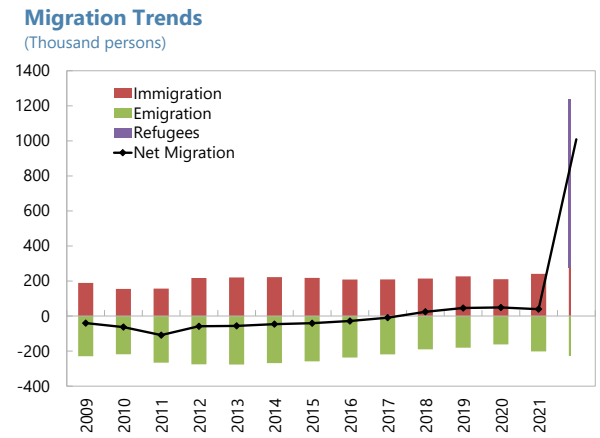
Sources: Eurostat; Haver Analytics; and IMF staff calculations.
1/ Labor productivity calculated as real GVA divided by number of employees.

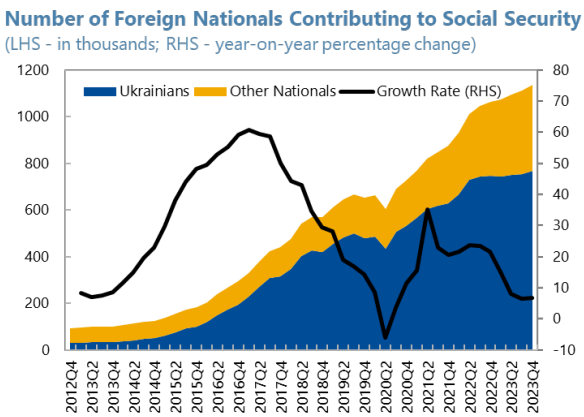
3. The labor supply overall was moderately supportive, benefiting from rising labor force participation rates, which was further supported in the last decade by migration. Labor force participation rates have closed on the EU27 level over the last decade. During the same time, Poland has transitioned to a net immigration country. Shortage of labor in some service sectors has prompted the shift from a labor exporter to a labor importer since 2018 (Text Figure 2). This trend has accelerated further since the onset of Covid and Russia's war in Ukraine. Foreign workers, including refugees, played a key role in addressing the recent labor shortage and keeping the Polish economy competitive (see 2024 Article IV Staff Report, Annex I).

Text Figure 2. Labor Supply and Immigration







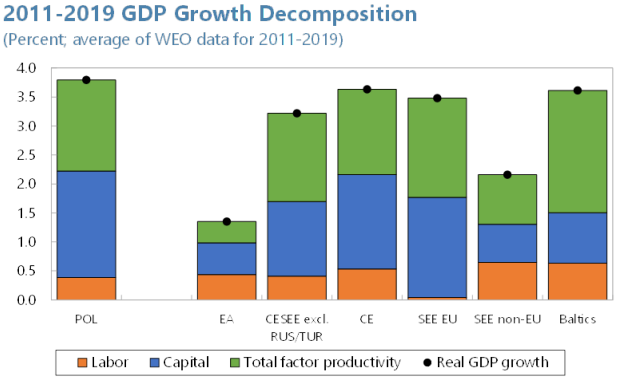


Sources: Eurostat, Labor Force Survey; Haver Analytics; Statistics Poland; ZUS; and IMF staff calculations.

Total Factor Productivity Convergence and Capital Accumulation

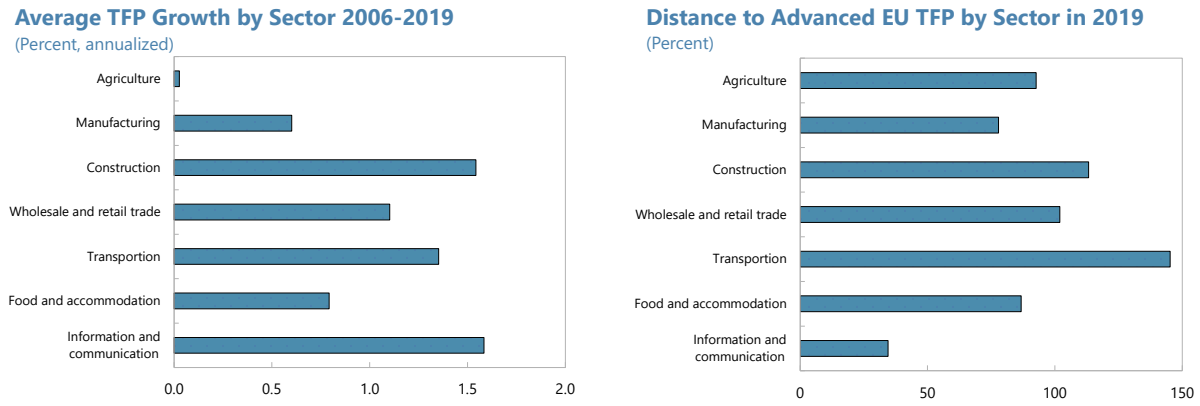
4. Decomposing potential growth by inputs point to TFP and capital accumulation as the main drivers:

- **Firm-level analysis confirms substantial TFP convergence to advanced European economies since EU accession.** This applies to most sectors with the notable exception of information, and communication technology (ICT) and manufacturing, where there remains significant scope for convergence (Text Figure 3).



Sources: IMF, World Economic Outlook (October 2024); and IMF staff calculations.
Note: EA = Euro area. CESEE excl. RUS/TUR = BGR, BIH, CZE, EST, HRV, HUN, LTU, LVA, MDA, POL, ROU, SRB, SVK, SVN. CE = HUN, POL. SEE EU = BGR, ROU. SEE non-EU = BIH, SRB.

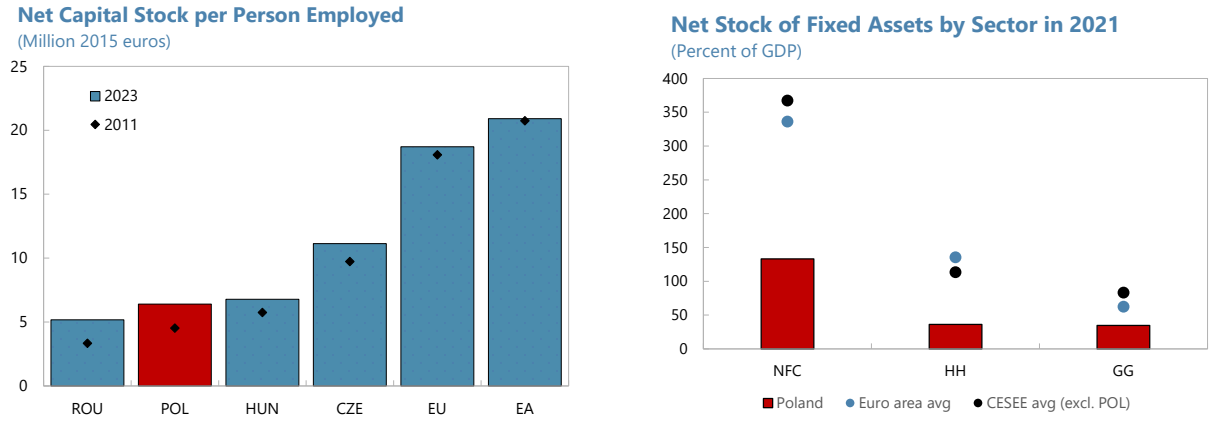
Text Figure 3. TFP Growth by Sector



Sources: Orbis; and IMF staff calculations.
Note: Distance to advanced EU TFP is defined as the ratio of the median firm's TFP in Poland to the median firm's TFP in EU countries that have higher per-capital income than Poland.

5. Capital accumulation also contributed to potential growth. Despite a relatively low investment-to-GDP ratio compared to regional peers, capital accumulation was still relatively significant given a smaller initial stock, with estimates showing higher increase in net capital stock per worker since 2011 relative to the region (Figure 4). Given Poland's still relatively small capital stock across sectors, there remains a significant scope for convergence through capital deepening.

Text Figure 4. Capital Stock Accumulation and Scarcity by Sector

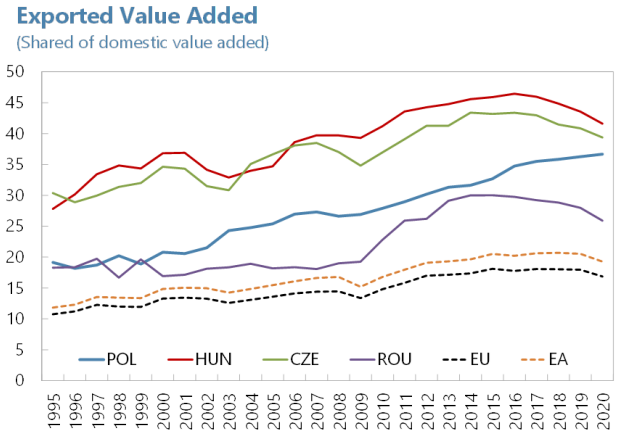


Sources: European Commission; AMECO database; Haver Analytics; Eurostat; and IMF staff calculations.

Spillovers from Deepening EU Trade and Institutional Linkages

6. Poland's trade linkages have deepened since the GFC. The share of value added in foreign demand increased from 27 percent in 2009 to 37 percent in 2020 based on the latest available OECD data, a substantial increase relative to the region closing much of the distance to

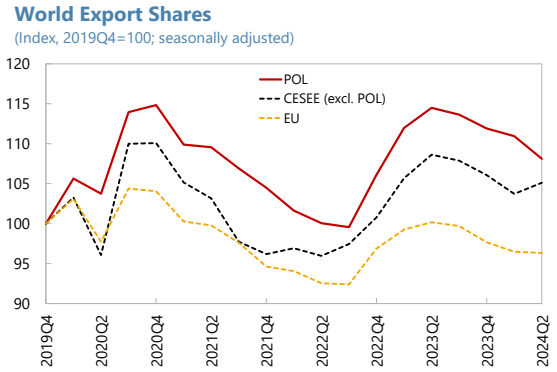
smaller open economies in CESEE such as the Czech Republic and Hungary. This transformation has supported technology transfer helping in part explain the TFP convergence. Trade also supported rising income levels as the rise in the value-added share from exports was generated despite a declining share of labor in tradable sectors.

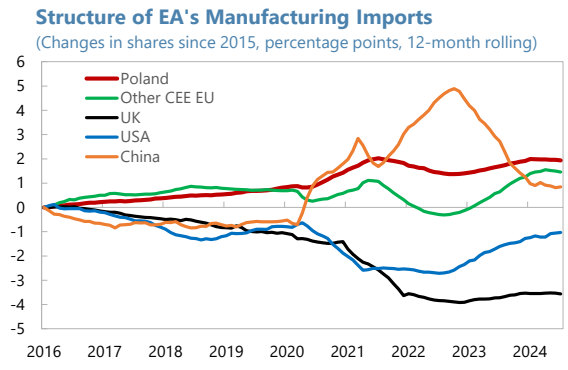


Sources: OECD, TiVA; and IMF staff calculations.

7. Notwithstanding following recent shocks, Poland has continued to expand its market shares in foreign demand. Poland's share of the world's exports has shown little sign of weakening following the successive shocks from the pandemic and the energy price shock. Polish shares of EA's manufacturing imports have continued to grow fast relative to competitors (Text Figure 5).

Text Figure 5. External Market Shares





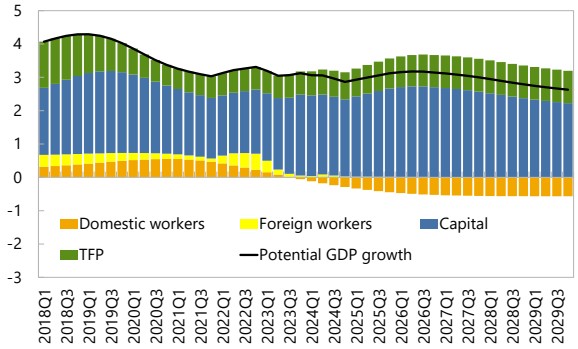
Sources: Direction of Trade Statistics, IMF; Haver Analytics; Eurostat; and IMF staff calculations.
Note: CESEE (excl. POL) is defined as BGR, CZE, HRV, HUN, ROU, SVK, SVN.

B. The Outlook for Potential Growth

8. Poland's economic convergence within the EU is expected to continue albeit at a slower pace. Using a production function approach (see IMF 2022 for details), staff now estimates that Poland's potential growth to remain solid, but gradually decline, reaching 2.7 percent by 2029 (Figure 6), still around twice the projected potential growth for the Euro Area. Medium-term growth is expected to be driven by capital deepening supported by Next Generation EU (NGEU) funds, as well as a recovery in total factor productivity growth, in part from the impact of recent labor hoarding, offsetting an increasing drag from a diminishing labor supply.

Text Figure 6. Contributions to Medium-Term Potential Growth
(Percentage points)

	Potential growth	L	K	TFP
2024	3.0	-0.2	2.4	0.8
2025	3.0	-0.4	2.5	0.9
2026	3.2	-0.5	2.7	0.9
2027	3.1	-0.5	2.6	1.0
2028	2.9	-0.6	2.4	1.0
2029	2.7	-0.6	2.3	1.0



Sources: Statistics Poland; ZUS; IFS; and IMF staff calculations.

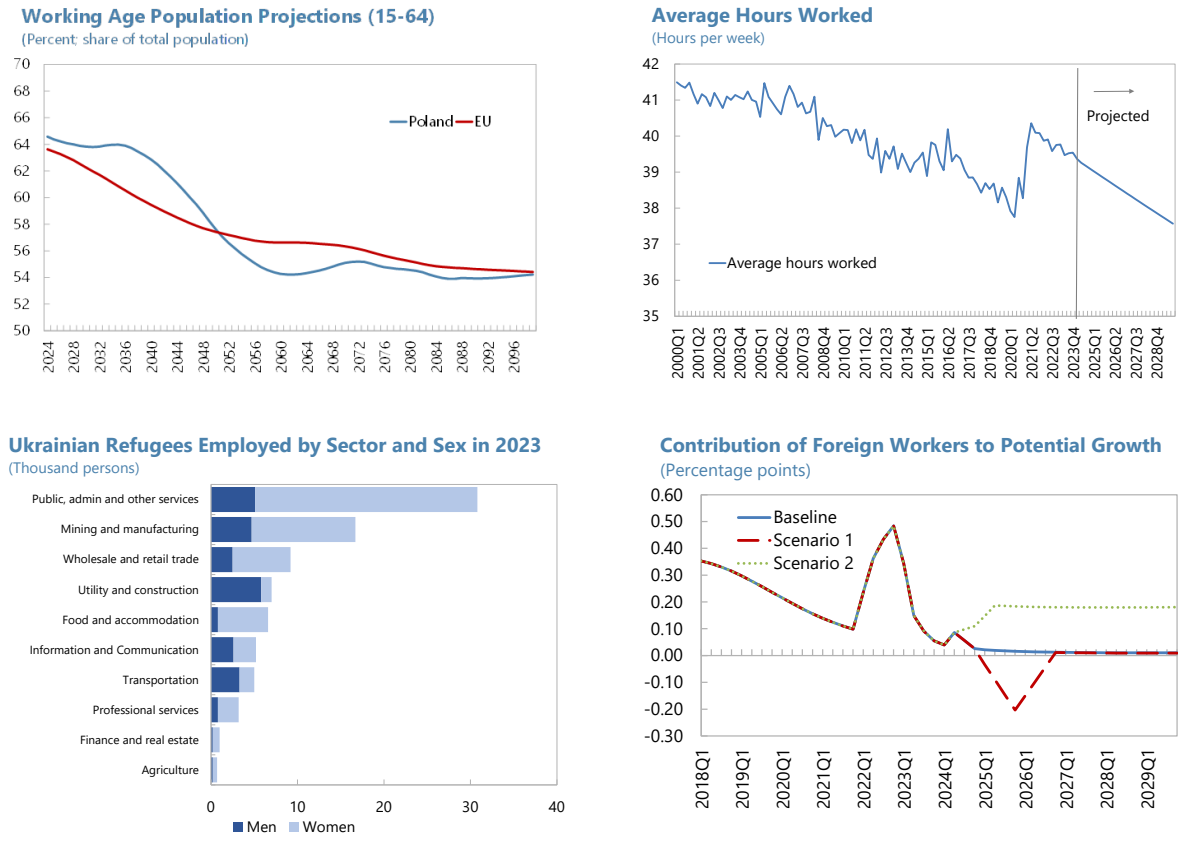
Labor Scarcity Weighs on the Outlook

9. Moving forward, the labor supply is expected to comprise a substantial drag on potential output. This contribution of around -0.6 percent each year is due to a declining working age population, a plateauing of labor force participation rates, and diminishing working hours per worker in line with post-pandemic trends (Figure 7). The baseline assumes that migration flows do not offset this domestic demographic headwind. Despite the significant contribution to potential growth from recent flows of migrant labor and refugees thanks to open and integrative policies towards Ukrainian refugees, the outlook for further dividends is highly uncertain due to:

- **Significant uncertainty on refugee flows moving forward given the still-unfolding war in Ukraine.** To fully offset the projected decline in the domestic labor force, the number of foreign workers will need to increase by 400 thousand, or one third by 2029, compared with a total labor force of about 18 million people (see 2024 Article IV Staff Report, Scenario 2 in Annex I. Text Figure 5). Meanwhile, foreign workers and refugees face considerable challenges in employment and integration. Surveys conducted by NBP, UNHCR and other agencies indicate skill-mismatch and language barriers as key challenges for recent immigrants including refugees in the labor market. In fact, the NBP survey suggests that 40 percent of pre-war Ukrainian migrants and 60 percent of refugees anticipate returning to Ukraine when the war ends, which for Poland could imply a loss of about 100 thousand foreign workers (Scenario 1). Under Scenario 1, potential output is reduced relative to the baseline by 0.2 percent by 2029, while under Scenario 2 potential output would be higher than the baseline by 0.9 percent.

- **Tightening migration policies.** The recent draft migration strategy emphasizes national security and would effectively restrict the inflow of foreign workers particularly those low skilled and those from outside of OECD countries. Given tightening labor market conditions and rising labor scarcity across the region including in OECD countries, this may effectively limit the scope for further net migration outside of refugee flows.

Text Figure 7. Impact of Labor Supply on Potential Growth

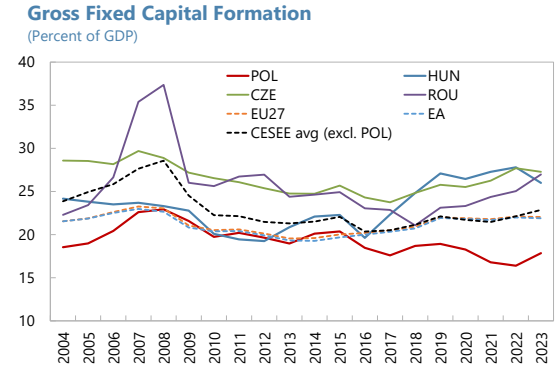


Note: Baseline assumes zero net inflow of foreign workers; Scenario 1 assumes 50 percent of refugees leave in 2025; Scenario 2 assumes an increase of 400 thousand new foreign workers by 2029 to offset the projected decline in the domestic labor force.
Sources: Statistics Poland; ZUS; and IMF staff calculations.

EU Fund Absorption Provides a Temporary Boost to Capital Deepening

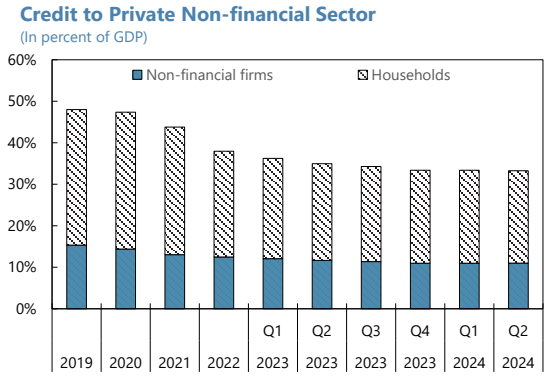
10. The execution of NGEU funds will help accelerate capital deepening in the near-term, but there is uncertainty on the outlook beyond that. A sustained pickup faces several challenges:

- **Investment rates have been trending at weak levels**. Poland has had low investment-to-GDP compared to peers in the region. Firm-level surveys point to overall limited investment appetite and higher barriers to investment than in peers (Box 1). Firm-level regression analysis confirms that uncertainty about future profitability and the macroeconomy had an impact on firm investment decisions, and weaker profit expectations contributed to lower investments following the global financial crisis (Box 2).



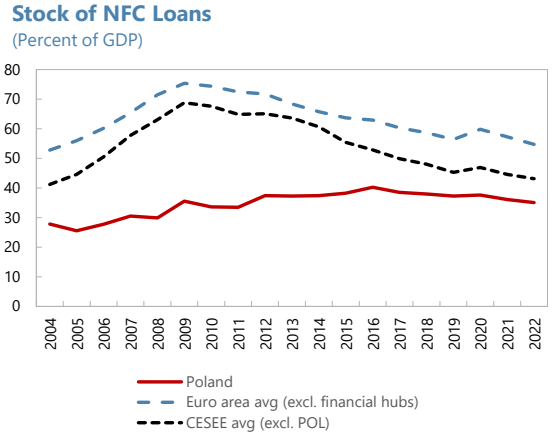
Sources: Eurostat; Haver Analytics; and IMF staff calculations.
Note: CESEE (excl. POL) is defined here as BGR, CZE, HRV, HUN, ROU, SVK, SVN.

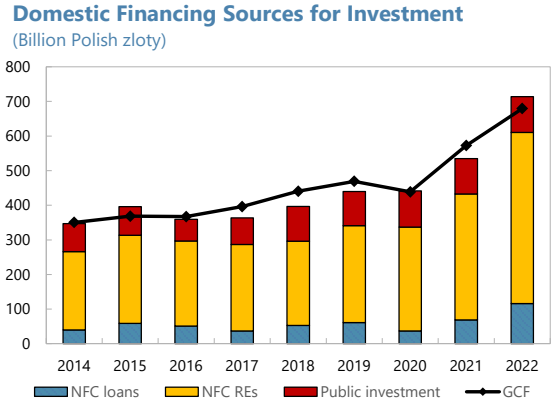
- **Credit intermediation for corporate investment is limited.** Polish enterprises rely mainly on retained earnings for investment and the share of non-financial corporate loans to GDP are lower than for EU and CESEE comparators (Figure 8). Moreover, much of the credit is external with domestic credit to private non-financial firms comprising less than 15 percent of GDP.



Sources: NBP; and IMF staff calculations.

Text Figure 8. Recent Investment Trends



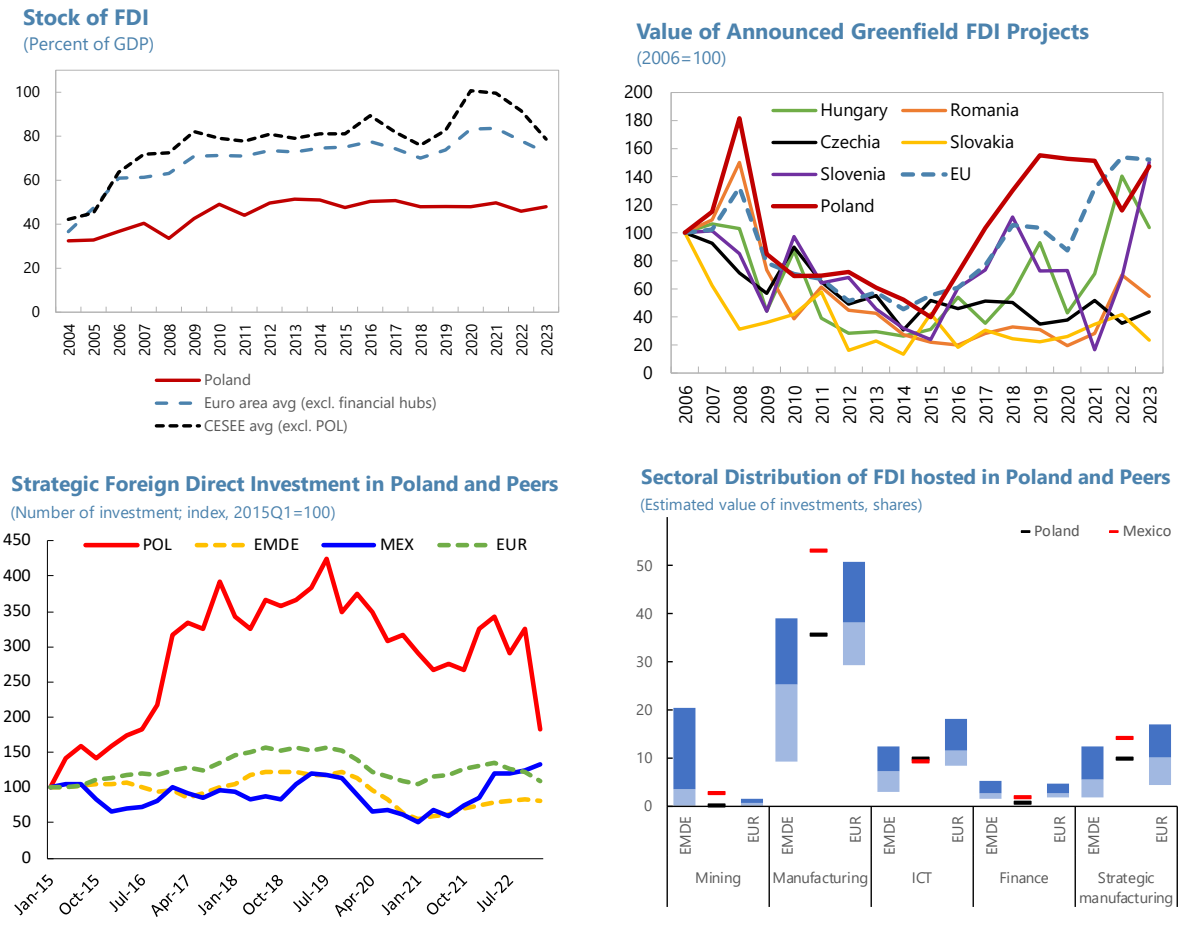


Sources: Haver Analytics; Statistics Poland; Eurostat; and IMF staff calculations.
Note: CESEE (excl. POL) defined as BGR, CZE, HRV, HUN, ROU, SVK, SVN.

- **FDI remains relatively low in Poland with geoeconomic fragmentation posing two-sided risks.** FDI liabilities stock has been stagnating around 50 percent of GDP since 2010, significantly lower than 70 percent for the euro area and 80 percent for CESEE countries (Figure 1). In addition, the nominal values of greenfield investment in Poland and Europe have not recovered to the pre-GFC peak level. With the deepening of geoeconomic fragmentation, Poland's political alliances could position it to benefit from the growing trends of near-shoring and friend-shoring in the short- to medium-term. Over the long-term, however, a wider or deeper fragmentation could divide trade and FDI flows, with the impact on Poland being highly uncertain (Figure 2).

- **Fiscal pressures are high, potentially crowding out public investment over the medium-term.** Given the significant fiscal pressures from current spending, including on defense, together with the imperatives of debt sustainability, non-military non-EU financed investment is projected to decline as a share of GDP from around 3.9 to 3.3 percent of GDP in 2029 (2024 Article IV Staff Report). Thus, maintaining public investment would require additional fiscal consolidation or a successor to NGEU funds.

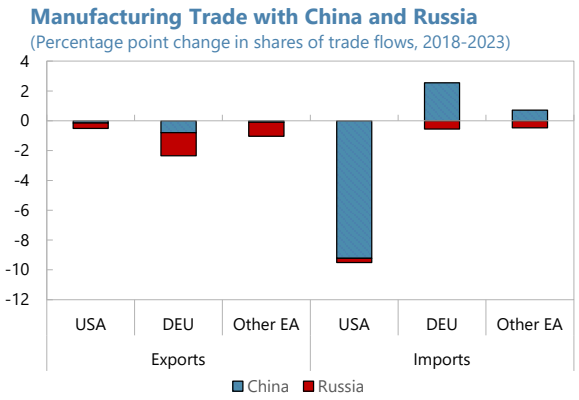
Figure 1. FDI Development



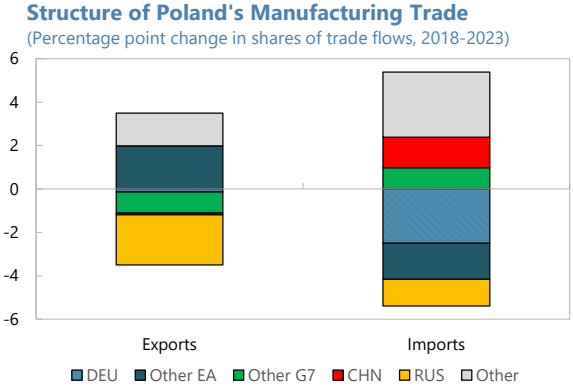
Sources: fDi Markets; Atlantic Council; NL Analytics; United Nations; European Commission; and IMF staff calculations.
Note: Strategic manufacturing sectors include semiconductors, telecommunications and 5G infrastructure, equipment needed for green transition, pharmaceutical ingredients, and strategic and critical minerals. See World Economic Outlook (October 2024) for details.

Figure 2. Geoeconomic Fragmentation and Poland

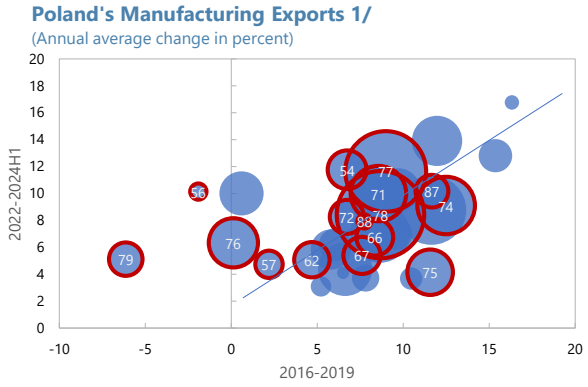
Geoeconomic fragmentation into economic blocs is changing global trade patterns, with Europe being relatively less affected.



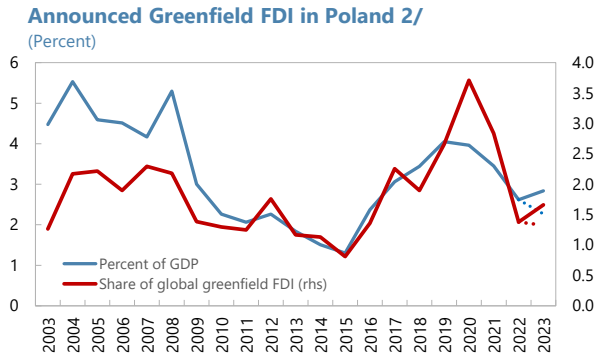
Similar to other EU countries, Poland's trade with Russia has declined, but its imports from China have only intensified.



Limited shift towards strategic goods exports suggests that geopolitical considerations have not played a major role yet.



Similarly, it is hard to see a clear near-shoring story in FDI inflows.

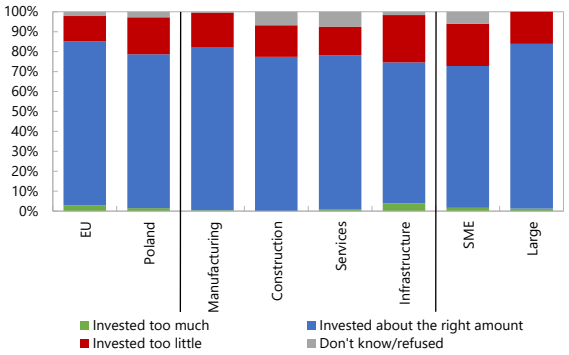


Sources: Eurostat; UN COMTRADE; UNCTAD; and IMF staff calculations.
1/ Disc size reflects exports value; strategic sectors highlighted in red; and numbers refer to ISIC codes.
2/ Dotted lines adjust for suspension of the Intel Corporation investment.

Box 1. Firm Investment Trends and Obstacles

A majority of Polish firms do not plan to ramp up investment. The European Investment Bank's Investment Survey indicates that around four-fifths of firms do not intend to increase their investment beyond current levels, suggesting that expected future profitability does not justify higher investment. Compared to the rest of EU, however, a slightly higher share of Polish firms reports unmet investment demand. In particularly, more firms in the infrastructure sector and more SMEs tend to report investment needs that are higher than their current levels. Even among firms planning to invest, nearly two-fifths anticipate directing their investment toward replacing existing capacity rather than expanding capacity or introducing new products.

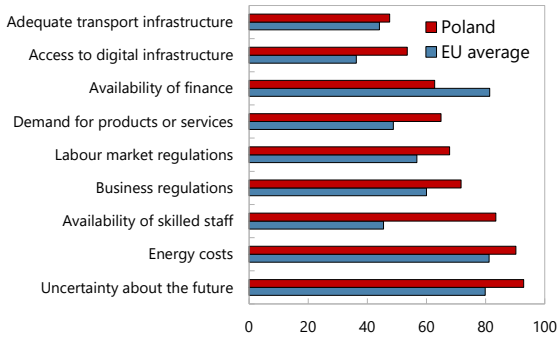
Poland: Perceived Investment Gaps, 2023
(Share of firms in category)



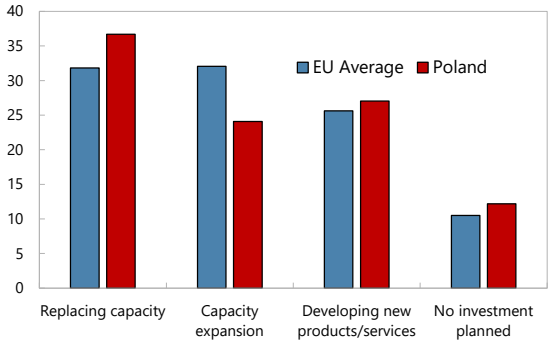
Source: European Investment Bank Investment Survey.

Polish firms face higher barriers to investment than their EU peers. Future uncertainty, energy costs and availability of skills top the list of long-term investment obstacles, followed by business and labor market regulations, access to finance and access to infrastructure. Compared to their EU peers, Polish firms face higher obstacles in most areas. Firm-level analysis confirms some of the main survey findings, highlighting the roles of expected future profits and the macro environment were main drivers of firms' investment decisions (Box 2).

Obstacles to Long-Term Invesment, 2023
(Percent of firms)



Investment Priorities, 2023
(Percent of firms)



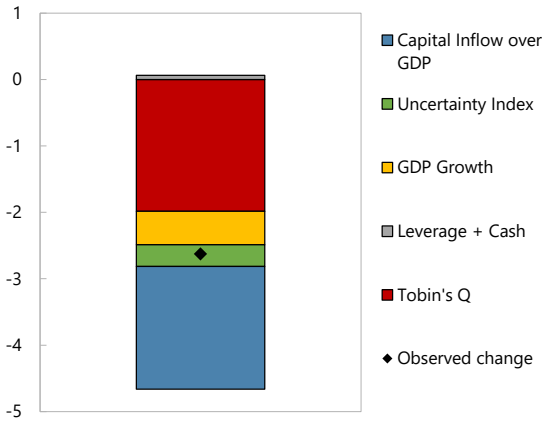
Sources: European Investment Bank Investment Survey; and IMF staff calculations.

Box 2. Determinants of Investments: Firm-Level Analysis

Regression analysis on firm-level data sheds light on important firm- and macro-level factors determining the investment decline since the GFC. Using firm balance sheet and income statement data, the analysis examines the determinants of net investment rate of 510 publicly listed firms over 20 years in Poland. The empirical specification draws from the theoretical literature: investment rates increase with a firm's market value relative to its cost of capital ("Tobin's q"), profits, and cash stock but decrease with higher leverage and cost of debt. Details of the methodology can be found in Chapter 3 of the World Economic Outlook (April 2024).

Regression results suggest expected profitability and macro environment had a significant impact on firms' investment. The overall investment rate has declined, on average, by about 2.6 percentage points since the GFC. Tobin's q, a forward-looking indicator of firms' profitability expectations, decreased by about 25 percent on average, contributing significantly to the decline in investment. Interest rate and profit margins do not have a statistically significant impact, although the variables in the regressions are not able to fully capture the cost capital and firms' financial constraints. While statistically significant, the impact of cash is relatively small. At the macro level, GDP growth, economic uncertainty and capital flows are important determinants of firms' investment decisions and contributed to the decline in investment after the GFC.

Contribution to Changes in Investment Rate Since 2009
(Percentage point)



	Net Investment Rate
Tobin's Q (t-1)	0.0585***
Leverage (t-1)	-0.1514***
Cost Debt (t-1)	0.0090
Profit Margin (t-1)	0.0173
Cash Stock over Assets (t-1)	0.1393***
GDP Growth (t-1)	0.2537***
Uncertainty Index	-0.0956***
Capital Inflow over GDP (t-1)	0.5526***
Observations	4233
Adjusted R-squared	0.4231

Note: Firm-level data come from Thomson Reuters Worldscope. Finance, insurance and real estate, and government agencies are excluded from the analysis. A 95% winsorization is applied on the variables used for the construction of total investment. Net Investment rate is defined as investment divided by lagged capital stock net of depreciation. All specifications include firm fixed effects. Standard errors are clustered at the firm level and shown in parenthesis. *, ** and *** indicate that coefficients are statistically different from 0 at the 10%, 5%, and 1% levels, respectively.

Sources: Thomson Reuters Worldscope; and IMF staff calculations.

Total Factor Productivity Growth to Remain Supportive but Less so than Pre-Pandemic

11. TFP growth is projected to recover from the impact of recent labor hoarding, but to remain below pre-pandemic levels. Given the accounting limitations for labor hoarding in this potential growth decomposition, the cyclical unwinding of labor hoarding will mechanically help TFP recovery over the medium-term.

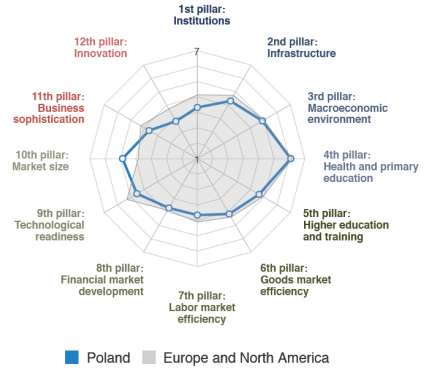
12. Underlying TFP growth may be suppressed by diminishing low-hanging fruits. The structure of the Polish economy has matured and is already stabilizing, with a large share of the workforce in higher productivity services. Thus, gains to productivity moving forward may depend more on within-sector productivity. Nevertheless, given already substantial convergence, the potential for imitation and technology adoption from European peers in most sectors have been largely reaped. Further TFP growth will need to come from either FDI and the associated technology transfers from the global technology frontier, higher allocative efficiency or self-innovation.

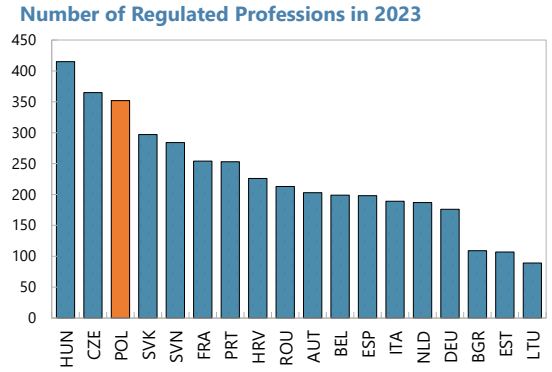
- Manufacturing and ICT stand out as two sectors with still significant room for further advancement to the technological frontier. To this end, investing in digital infrastructure is crucial for promoting productivity growth in these two sectors, as digitalization, automation and artificial intelligence technology will determine their productivity frontiers in the future.

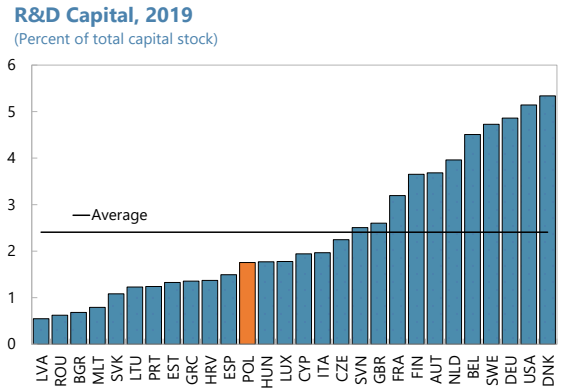
- Reducing barriers to resource reallocation would help support higher productivity. This includes addressing regulatory barriers to competition in some services professions (for example: architects, accountants, lawyers) and relaxing product market regulations.

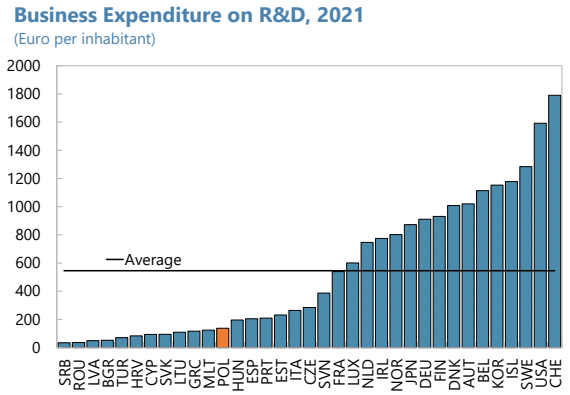
- Strengthening the business environment to attract FDI and R&D activities, including from non-European sources to tap into the global technological frontier, could further improve TFP growth (Figure 2).

Text Figure 10. Business Climate and Innovation Indicators









Sources: EUKLEMS; Eurostat; European Commission; World Economic Forum; and IMF staff calculations.

C. Risks

13. The outlook for potential growth is subject to considerable downside risks due to external and internal factors. The strong competitiveness of the Polish economy could be eroded if a convergence in labor costs picks up speed, while labor productivity growth stalls. Such loss of competitiveness would weigh on trade and FDI, and with it on the potential for new technology transfers and productivity. At the same time, regional conflicts and geoeconomic fragmentation are adding uncertainty to the global supply chain and trade linkages and may present additional headwinds to penetrating markets outside of the EU. On the investment front, much will depend on the capacity of the banking system to accelerate private sector credit-to-GDP from the current low levels. Given fiscal pressures, a crowding out of both public and private investment over the medium-term could substantially curtail potential growth further. On the upside, structural reforms, both on the EU level and in Poland would support investment and productivity and boost potential output. Such reforms will be needed to sustain growth over the longer-term as the EU's RRF funds wind down and population ageing accelerates.

D. Policy for Sustaining Long-Term Growth

14. Policies should focus on deepening capital, facilitating resource reallocation, supporting labor supply, and enhancing innovation capacity.

- *Supporting investment.* Poland's capital stock remains significantly below comparators. Policies should aim to support business financing and ease regulatory hurdles to FDI and private investment. The government should also address obstacles to long-term investment, i.e., the efficiency of tax and business legislation, and basic infrastructure. To this end, NGEU grants should be absorbed fully and effectively to address infrastructure gaps and support digitalization.

- *Improving allocative efficiency.* Poland imposes more labor market restrictions than its European peers, including regulatory barriers to competition in some professions. Relaxing labor and product market regulations could facilitate workers' movement within and between sectors. Strengthening insolvency procedures including by strengthening the capacity of courts for timely processing would also support higher dynamism.

- *Ensuring an adequate labor force. S*trengthening vocational training and skill-matching could improve skills and allocative efficiency. Raising labor force participation among older cohorts should be complemented by enhancing adult learning. Female Labor participation should be supported by ensuring adequate child and elderly care. Following the successful initial absorption of Ukrainian refugees, better integrating foreign workers through adequate language training, social support, and transportation could increase productivity and attract foreign labor.

- *Nurturing innovation.* Poland has closed on Europe's productivity frontier in most sectors (except manufacturing and ICT). To sustain growth, it will need to transition from technology adoption

to innovation. However, R&D capital in Poland is scarce relative to peers, and R&D spending is low. Government incentives and the financial system should be geared toward creating a conducive environment for R&D and other innovation activities, including by promoting private equity and venture capital.

PUBLIC PENSION SYSTEM AND OUTLOOK

The prospects of the Polish public pension system raise concerns about its adequacy over the long-term, particularly for poorer pensioners, women, and non-standard employees. Without any reforms, by 2050, the benefit ratio would decline from 45 to 29 percent due to unfavorable demographics. The steep decline in the benefit ratio implies a convergence of the average pension to the minimum pension, eventually resembling a universal system. Counteracting the effects of population aging to maintain the benefit ratio would be fiscally costly, as spending on pensions would need to increase by some 6 ppts of GDP by 2050. Options to maintain pension adequacy in a fiscally sustainable manner are limited and may be challenging to implement. Thus, a comprehensive multi-pronged approach is recommended to help cushion the effects of population aging, including extending working lives, pursuing active labor market policies, supporting household savings, and basing contributions of the self-employed on actual income.

A. Pension System Overview

1. The general pension scheme dominates the public pension system in Poland. The Polish public pension system consists of three major social insurance systems: the general pension system, the farmers' pension system, and the security provision system.[1] The general pension system covers most employees and self-employed and includes two mandatory and one voluntary pillars (Table 1):

- Pillar 1 constitutes the largest share of pension expenditures and pensioners and operates as a notional defined contribution (NDC) pay-as-you-go system managed by the Social Insurance Institution (ZUS), where current employees' contributions, supplemented by state budget transfers, finance current pensions.

- Pillar 2 operates as a funded Defined Contribution (DC) system managed by private institutions (open pension funds, *Otwarty Fundusz Emerytalny*, OFEs). While Pillar 2 is part of the mandatory arm of the pension system, participation in Pillar 2 is voluntary, and the decision to participate does not affect the total contribution rate. This means that when a person decides to forgo participating in Pillar 2, their pension contribution is directed in full toward Pillar 1 (see Text Table 1, contributions options 1, 2, and 3). At end-March 2024, there were 8 OFEs, serving 14.5 million members, and managing PLN 222 bn (about 6.5 percent of 2023 GDP) in assets.[2]

- Pillar 3 is voluntary and set up to supplement future benefits. It includes several products, with the most recent addition of the Employee Capital Plans (PPK). Although voluntary, the

[1] In 2022, the general pension system covered 86.6 percent of pension expenditures (85.5 percent of pensioners); the farmers' pension system covered 6.5 percent of pension expenditures (10.3 percent of pensioners); and the pension scheme for security provision system covered 6.9 percent of pension expenditures (4.2 percent of pensioners). The pension scheme for the security provision system does not rely on contributions and is entirely financed from the state budget (Economic Policy Committee Ageing Working Group 2023).

[2] Source: Polish Financial Supervisory Authority (*Komisja Nadzoru Finansowego*, KNF), quarterly bulletin on pension funds, 2024Q1.

introduction of financial incentives and auto-enrollment in the PPK has helped increase total participation to 48.4 percent, with the net asset value reaching PLN 27.4 bn (0.8 percent of GDP) by mid-2024 (PFR Portal PPK Monthly Newsletter 2024). All products of Pillar 3 had an accumulated asset value of about 1.7 percent of GDP at the end of 2022 (Economic Policy Committee Ageing Working Group 2023).

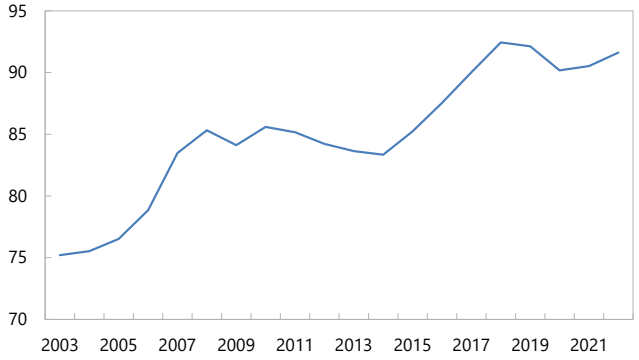
Text Table 1. Poland: General Pension System Structure

	Pillar 1		Pillar 2	Pilar 3			
	Non-financial		Financial	Occupational Pension Scheme (PPE)	Individual Pension Account (IKE)	Individual Pension Security (IKZE)	Employee Capital Plans (PPK)
	Pay-as-you-go, NDC		Fully funded, DC	Fully funded, DC	Fully funded, DC	Fully funded, DC	Fully funded, DC
Managed by:	ZUS		Pension funds	Investment funds chosen by employer		Financial Market Institutions	
Participation:	Mandatory	Mandatory	Possible to resign	Voluntary	Voluntary	Voluntary	Automatic enrollment. Able to opt out.
Form:	Main account in ZUS NDC 1st account 1/	Sub-acount in ZUS NDC 2nd account 1/	Open Pension Fund (OFE)				
Base	Gross wage	Gross wage	Gross wage	Gross wage	Gross wage	Gross wage	Gross wage
Contibutions:							
Option 1	19.52%	…	…	Employer: 3.5% - 7%	Own choice, capped	Own choice, capped	Employee: 2% (+ voluntary up to 2%)
Option 2	12.22%	7.30%	…				Employer: 1.5% (+ voluntary up to 2.5%)
Option 3	12.22%	4.38%	2.92%				State: Single PLN 250 + annual PLN 240
Contributions paid by:	1/2 employee, 1/2 employer	1/2 employee, 1/2 employer	1/2 employee, 1/2 employer	Employer	Employee	Employee	Employee, employer, state

Source: 2024 Ageing Report Poland Country Fiche.
1/ The main account and sub-account differ in the method of indexation and inheritance rules.
DC = Defined Contribution. NDC = Notional Defined Contribution.

2. Poland's public pension coverage ratio has increased substantially during the last two decades, with the coverage ratio – the number of contributors over the labor force –increasing from about 75 percent in 2003 to 92 percent in 2022, as the number of contributors well outpaced the labor force growth rate (text chart). The statutory retirement age of 65 years for men and 60 years for women has remained in place for decades, but the effective retirement age has fluctuated somewhat. During 2017-22, the average effective retirement age increased marginally for men and decreased slightly for women, reaching 64.9 years for men and 60.6 years for women in 2022 (Social Insurance Institution, 2023).

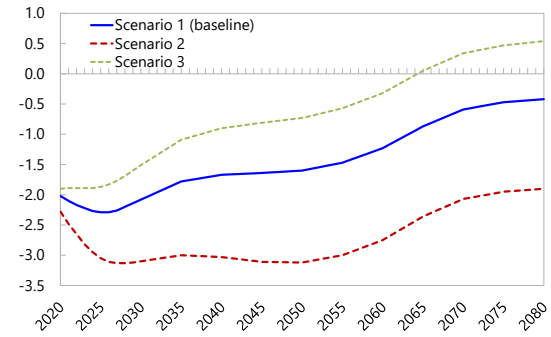
Public Pension Coverage Ratio
(In percent 1/)



Sources: ZUS; Haver Analytics; and IMF staff calcuations.
1/ Defined as the ratio of contributors to labor force. Constributors defined as the number of insured persons. Labor force is defined as active population aged over 15 years.

3. Contributions primarily finance Pillar 1 of the general pensions system, but transfers from the budget are also needed to fill the gap. In 2022, pension contributions to the general pension system covered about 84 percent of the total expenditures of ZUS, and the state budget allocation amounted to about 1.3 percent of GDP (Social Insurance Institution 2023). Under the baseline, the pension fund is forecast to remain in deficit over the entire period (until 2080, text chart; Social Security Institution 2019).

ZUS: Annual balance of the pension fund
(Percentage of GDP)

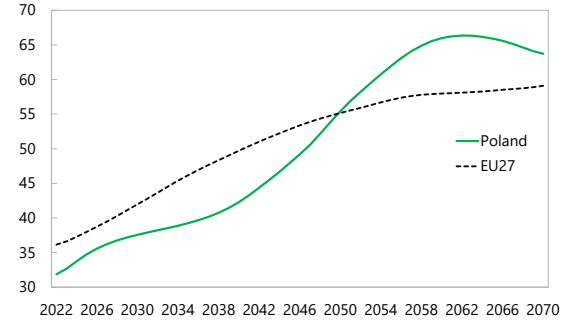


Sources: ZUS, "Pension fund forecast of revenues and expenditures until 2080", May 2019.

B. Pension Projections

4. Over the next few decades, Poland is projected to have one of the fastest-aging populations in Europe. The current population of Poland is still young, and the share of the older population aged 65 and above constitutes only 19.2 percent (vs. 21.2 percent EU27 average). However, the population is aging mainly due to low fertility and increased longevity, and is expected to decline by about 3.5 million by 2050 (from 38.1 million in 2022 to 34.6 million in 2050). Meanwhile, the old-age dependency ratio is set to increase significantly from 31.9 to 55.4 percent during 2022-50 (text chart) (European Commission 2024).

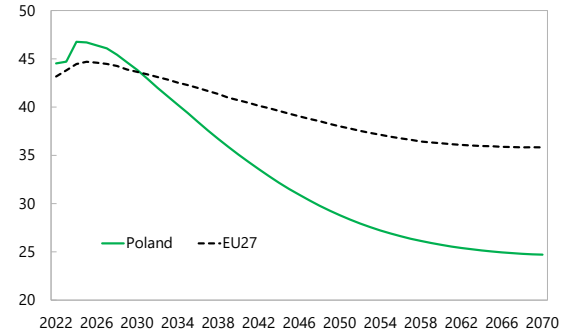
Old-Age Dependency Ratio
(In percent)



Sources: 2024 Population Ageing Report.
1/ Defined as population aged 65+ over aged 20-64, in percent.

5. Public pension expenditure, however, is projected to remain constant in percent of GDP, as a declining benefit ratio largely offsets worsening demographics. Under the baseline, the gross public pension expenditure-to-GDP ratio is projected to remain broadly unchanged at about 10-11 percent of GDP during 2022-50 (Figure 1, graphs 1 and 2)[3]. In the NDC system, the negative impact of demographic change on pension expenditure is primarily offset by the decline in pension benefits (the benefit ratio, defined as the ratio of average pension to average wage). Thus, the benefit ratio is expected to decline from 45 to 29 percent by 2050, more than the EU average (text

Public Pension Benefit Ratio
(In percent)

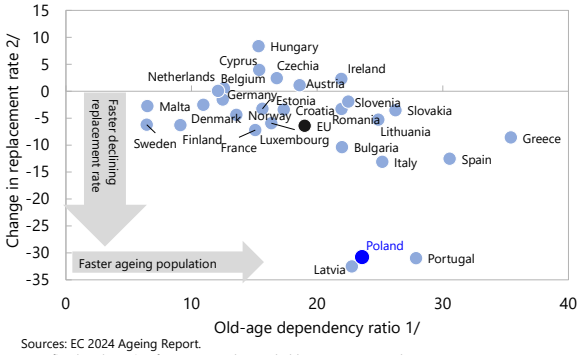


Sources: 2024 Ageing Report.

[3] Public pension expenditure includes the general pension system, the farmers' pension system, and the pension scheme for the security provision systems.

chart; Figure 1, graphs 3 and 5).[4] To some extent, this decline in benefits is a consequence of the transition from the old pension system that existed before the 1999 pension reform to the current NDC system. [5] In the NDC system, a further part of the decline results from the pension formulas, as the steep decline in employment growth feeds into slower wage bill growth, resulting in lower valorization of pension benefits, combined with assumptions about increasing life expectancy and a constant retirement age.

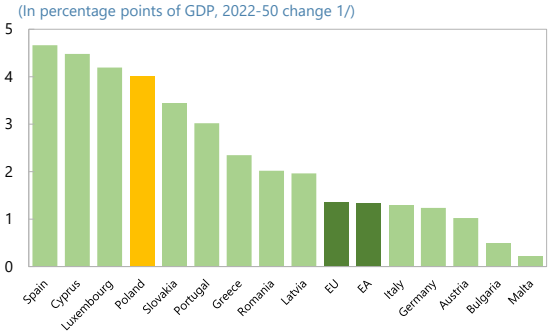
Population Ageing and Falling Pension Replacement Rates
(In percentage points, projected change during 2022-50)



Sources: EC 2024 Ageing Report.
1/ Defined as the ratio of persons aged 65 and older to persons aged 20-64.
2/ Defined as gross replacement rate at retirement (old-age earnings-related public pensions).

6. In an illustrative scenario where benefit ratios remain fixed, pension expenditures would be about 6.3 ppts of GDP higher in 2050 than in 2022, raising the total pension expenditures from about 11 to some 17 percent of GDP.[6] Benefits decline due to worsening demographics, which are particularly strong in the 2040-50 and 2050-60 periods, reflecting the aging of the post-war baby boomers (Text Figure 1, graph 2), (Economic Policy Committee Ageing Working Group 2023). Under the 2024 Ageing Report scenario, which allows some decline in the benefit ratio (10 percent relative to the 2022 level), additional payments would be required around 2035 and pension expenditures would need to increase by some 4 ppts of GDP by 2050 (text chart) (European Commission 2024).

Public Pensions: Constant Benefit Scenario
(In percentage points of GDP, 2022-50 change 1/)



Sources: EC 2024 Population Ageing Report.
1/ Change in public pension gross expenditure in percent of GDP under a "constant benefit scenario", where the benefit ratio is allowed to decline by 10 percent relative to the 2022 level.

[4] The replacement rate – the ratio of the first pension of those who retire each year over an economy-wide average wage at retirement – is projected to decline from 58 percent in 2022 to about 27 percent in 2050 and stabilize afterward (Text Figure 1, graphs 4 and 6)

[5] While pensions are calculated based on the NDC formula since 2013, calculations are influenced by the "initial capital" – the calculation of capital earned before the introduction of the pension reform in 1999 plus its indexation.

[6] The decomposition of factors behind the change in the projected public pension expenditure between 2022 and 2050 suggests a cumulative dependency ratio effect of 6.3 ppts of GDP (Economic Policy Committee Ageing Working Group 2023).

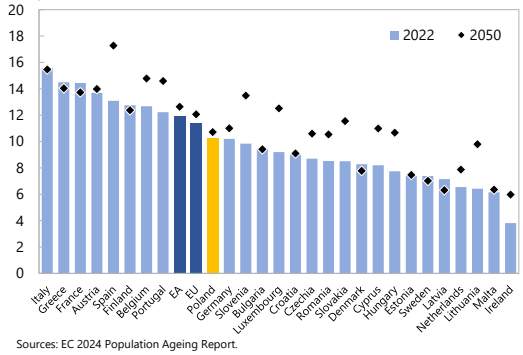
Figure 1. 2024 Ageing Report Forecasts

The level of gross Polish public pension expenditure in 2022 was broadly comparable to the EA and EU averages.

The forecast assumes that gross public pensions will broadly remain at around 11 percent of GDP by 2050.

Gross Public Pensions

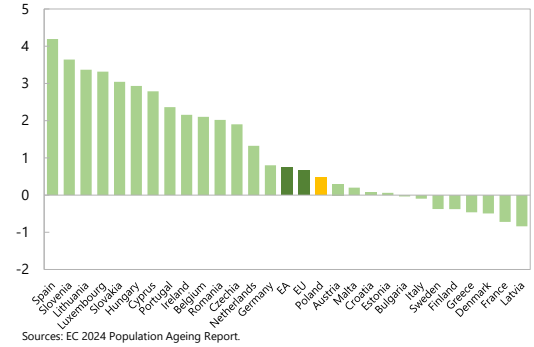
(In percent of GDP)



Sources: EC 2024 Population Ageing Report.

Change in Gross Public Pension Expenditure: 2022-50

(In percentage points of GDP)

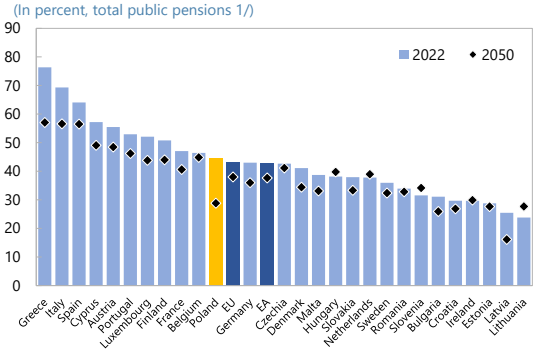


Sources: EC 2024 Population Ageing Report.

The benefit ratio and the gross replacement rate levels in 2022 were broadly in line with the EA and EU averages.

Benefit Ratio

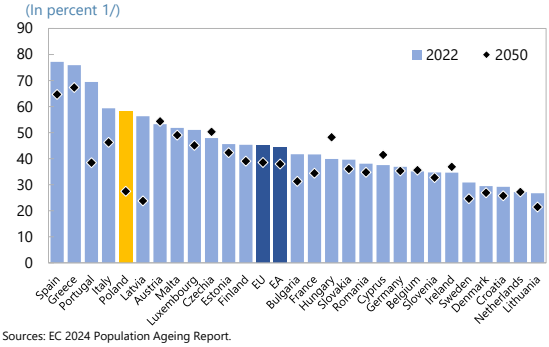
(In percent, total public pensions 1/)



Source: EC 2024 Population Ageing Report.
1/ Defined as the ratio of average pensions to average wages.

Gross Replacement Rate at Retirement

(In percent 1/)

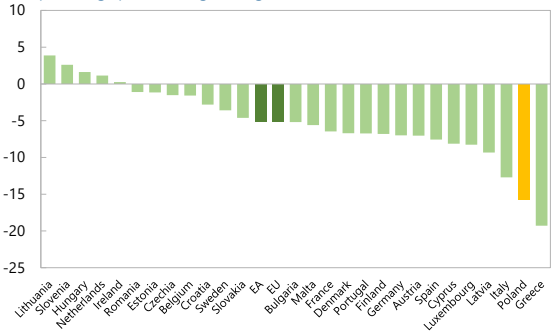


Sources: EC 2024 Population Ageing Report.
1/ Defined the ratio of the first pension of those who retire each year to the economy-wide average wage at retirement. Includes old-age-related public pensions.

By 2050, however, they are forecasted to decline to low levels, well below EU and EA averages, given that falling benefit and replacement rates will offset the effects of worsening demographics.

Change in Benefit Ratio: 2022-50

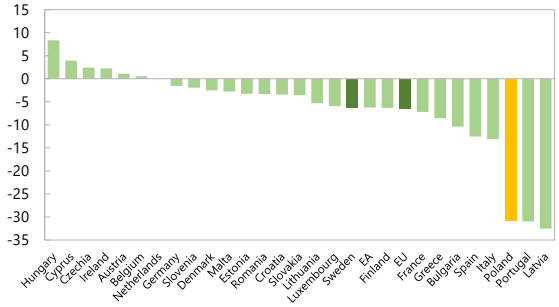
(In percentage points, change during 2022-50 1/)



Sources: 2024 Population Ageing Report.
1/ Defined as the ratio of average pensions to average wages. Includes total public pensions.

Change in Gross Replacement Rate: 2022-50

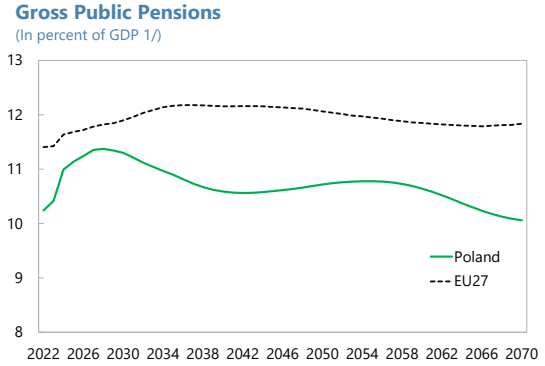
(In percentage points, change during 2022-50 1/)



Sources: EC 2024 Population Ageing Report.
1/ Defined the ratio of the first pension of those who retire each year to the economy-wide average wage at retirement. Includes old-age-related public pensions.

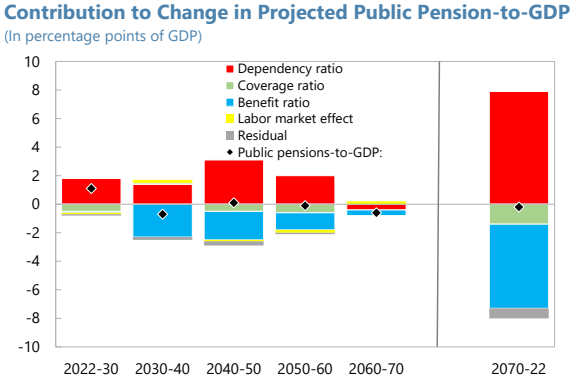
Text Figure 1. Public Pension Forecast and Contributing Factors

Gross public pension expenditures are projected to remain broadly unchanged under the baseline, ….



Sources: 2024 Population Ageing Report.
1/ Baseline projection.

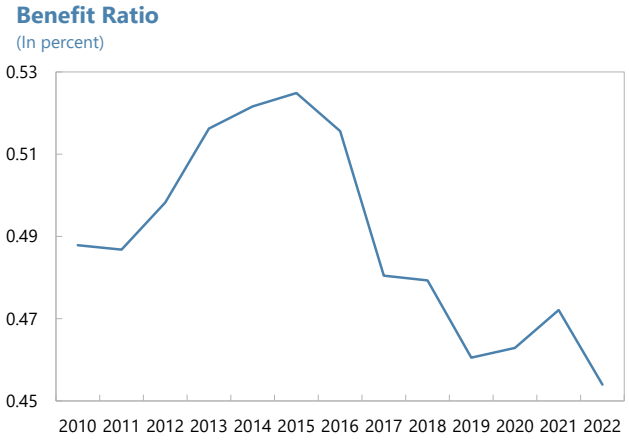
… as the increase due to unfavorable demographics (increasing dependency ratio) is offset by declining benefit ratios.



Source: EC 2024 Ageing Report.

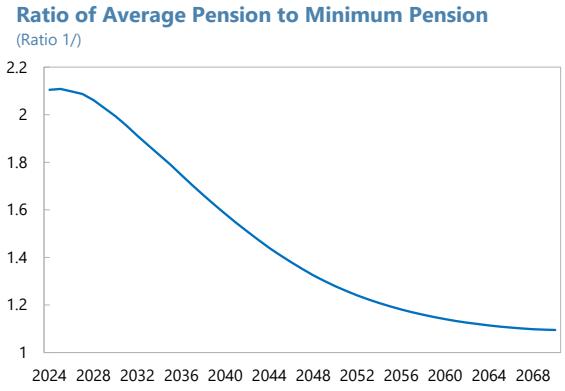
C. Challenges

7. The steep projected benefit ratio decline raises concerns over the system's adequacy and social sustainability. The benefit ratio declined during 2015-22 (text chart) as average wages outpaced average pensions. Additional top-ups have already been introduced to support pensions, including through the 13the pension and 14th pension (introduced in 2019 and 2021 respectively), financed from the state budget and introduced initially as one-off cash benefits. The minimum pension top-ups are also rising, financed through the state budget.



Sources: Ministry of Finance; and IMF staff cacluations.

8. Given the decline in formula-based pensions, the average pension is expected to converge to the minimum pension. Persons who reached the retirement age and completed an insurance period of 25/20 years for men/women qualify for a boost to reach the minimum (social) pension.[7] In the current NDC system, the average pension to minimum pension ratio would be expected to approach unity, resembling a universal pension system (text chart).



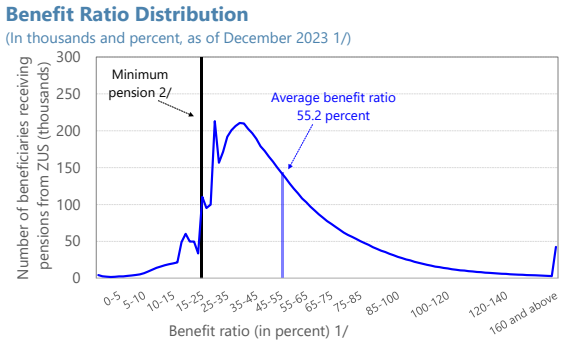
Sources: 2024 Ageing Report; Ministry of Finance; and IMF staff calculations.
1/ In this calculation minimum pensions are indexed by the CPI plus 0.2*(real wage growth).

[7] In 2023, the minimum pension was PLN 1,588.44 (Social Insurance Institution (ZUS) 2023, p. 67).

9. Furthermore, the number of individuals receiving less-than-minimum pensions continues to increase, driven by part-time workers, mostly women. Some retirees do not have the required work experience to be eligible for a minimum pension. The number of pensioners receiving below-the-minimum pensions increased ten-fold during 2012-22 from about 36 thousand to 365 thousand individuals, driven by growth in part-time workers, rising from 4.4 percent to 9.6 percent of pensions paid (under the new system) (Text Figure 2)[8]. Women constitute the majority, as over 80 percent of less-than-minimum pension recipients in 2022 were women.

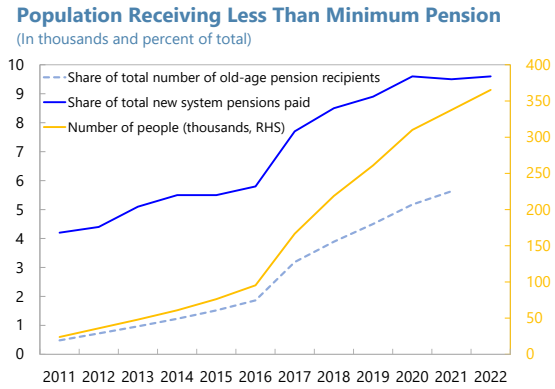
Text Figure 2. Below-Minimum Pensions

A significant portion of the population received below minimum pension in 2023, …



Sources: ZUS Department of Statistics and Actuarial Projections.
1/ Benefit ratio defined as monthly pension paid by ZUS (including care benefits) in percent of average wage after deducting mandatory social contributions.
2/ Minimum pension as of March 2023.

… as the number of people receiving below minimum pension continued to increase over several years.



Sources: Statista; ZUS; and IMF staff calculations.

D. Pension Inequities…

10. Pension adequacy will increasingly depend on longer working lives across the EU. The 2024 Pension Adequacy Report (Council of the European Union 2024) calculates counterfactual scenario replacement rates, called Theoretical Replacement Rates (TRR).[9] These simulations show that, for a standard 40-year career, TRRs are set to fall during the next four decades in most countries, including a significant decline in Poland over 2022-62. This suggests that extending one's career to accrue higher pension benefits is critical to maintaining pension adequacy.

…By Gender

11. Pension replacement rates in Poland among women tend to be lower than those among men, resulting in a gender gap. Women, on average, have lower pensionable earnings, lower statutory retirement age, and lower average contributory periods. As a result, women receive

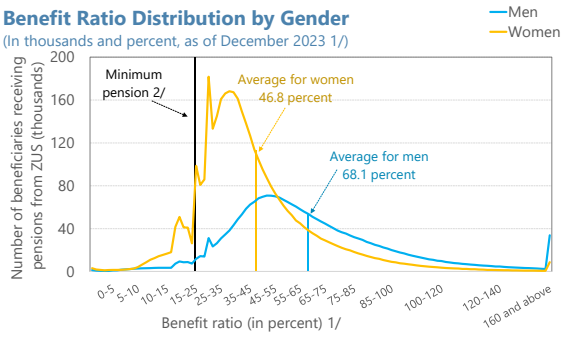
[8] See (Department of statistics and actuarial forecasts 2023) for details.

[9] TRR is defined as the level of pension entitlements people would receive in the first year after retirement, measured as a percentage of individual earnings the year before retirement. TRRs can be used for scenario comparisons and typically reflect the income-maintenance dimension of pension adequacy.

lower pensions than men with lower benefit ratios (Text Figure 4, graph 1). Their benefit ratios are also expected to decline and remain below those of men (Text Figure 4, graph 2).

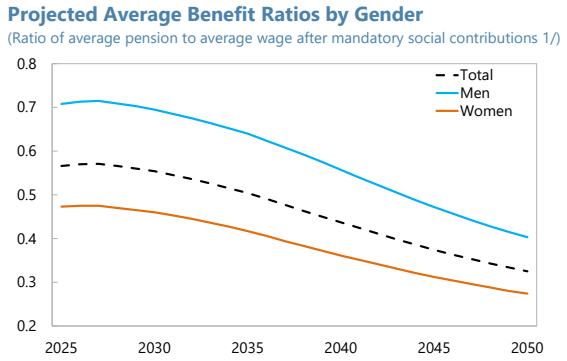
Text Figure 4. Benefit Ratios by Gender

Women on average receive lower pensions than men…



Sources: ZUS Department of Statistics and Actuarial Projections.
1/ Benefit ratio defined as monthly pension paid by ZUS (including care benefits) in percent of average wage after deducting mandatory social contributions.
2/ Minimum pension as of March 2023.

… which is also reflected in the lower projected benefit ratios among women.

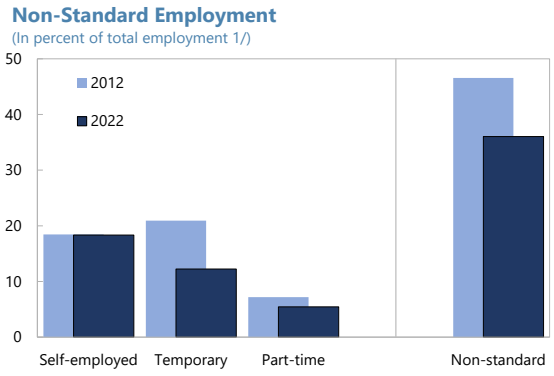


Sources: ZUS Department of Statistics and Actuarial Projections.
1/ Benefit ratio defined as projected average monthly pension paid from Social Insurance Fund (excluding old-age care benefit) as a ratio of average wage after deducting mandatory social contributions.

12. As a result, and similar to all EU countries, older Polish women face a higher poverty risk than men, particularly if they are single. With the share of women not qualifying for the social (minimum) pension increasing, this poses a risk of old-age poverty, all the more as women also tend to leave the labor market early but live longer on average. Both poverty and deprivation risks in old age are higher for women than men in all EU member states, and living single in old age further increases the poverty risk for women relative to men. In Poland, however, the overall at-risk-of-poverty rate is lower than the EU average (15.2 vs. 17.3) and has declined over time (Council of the European Union, 2024).

…By Type of Employment

13. Many non-standard workers can expect pension prospects to be worse than those of employees. Although the share of non-standard employment (self-employed, temporary, part-time) has declined over the last decade, non-standard workers constitute more than one-third of total employment in Poland (text chart). As of 2024Q2, about 11 percent of pension contributors to the Social Insurance institution were self-employed (with and without employees) and another 8 percent were working on the basis of



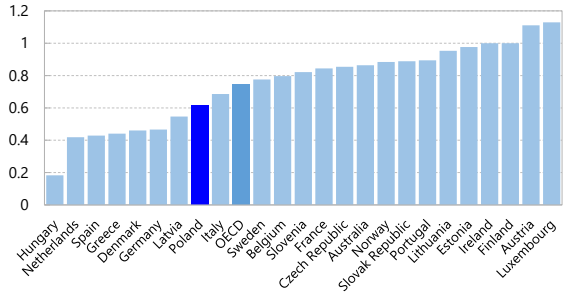
Sources: Eurostat; and IMF staff calculations.
1/ 15-64 years old.

civil code contracts.[10] Non-standard employees, such as temporary and self-employed workers, face heightened pension adequacy concerns.

14. Temporary workers, particularly workers on civil law contracts, may face lower pensions upon retirement. Civil law contracts are a special category of non-standard contracts used to contract labor. They include two types: the contract to perform specified work and the contract of mandate, with the latter being more prevalent. The number of workers on civil law contracts has increased since the early 2000s. Civil law contract jobs tend to be less regulated than other types of temporary work (for instance, fixed-term, temporary agency work) in various areas, including protection against dismissal, worker rights, and social security coverage. Persons working under civil law contracts often tend to be less educated and frequently earn less than the standard employees. Low contributions of civil law workers will likely result in lower pensions relative to employees even if they spend only a share of their careers working under civil law contracts (Lewandowski 2018)[11].

15. Like many EU member states, pension rules differ between employees and the self-employed in Poland. The general pension system in Poland covers the self-employed, and, in principle, they pay the same contribution rates, but the base is different from that of employees. The base is equal for all self-employed and amounts to about 60 percent of the average wage (OECD 2023b). As a result, most self-employed workers pay relatively low contributions because only a flat-rate amount is mandatory, which lowers their future benefits in the NDC scheme. Simulations show that self-employed in Poland face pensions equivalent to about 60 percent of those expected by the employees (text chart; Council of the European Union 2024).

Theoretical Relative Pensions of the Self-Employed
(In percent of those employed; selected OECD economies 1/)



Sources: OECD Pensions at a Glance 2021 (OECD pension models).
1/ Theoretical pensions of a self-employed worker relative to an employee having both a taxable income (net income or net wage before taxes) equal to the average net wage before taxes, for individuals with a full career from age 22 in 2018 and contributing only the amount that is (quasi) mandatory to pensions.

E. Pension Funds' Role in Capital Markets

16. Over the last two decades OFEs have played a notable role in the domestic capital markets, but their importance is likely to continue declining in the future. At the initial stage, OFEs' assets grew rapidly, mainly driven by inflows of new contributions from ZUS (Osinski and Tymoczko 2007) (Text Figure 5, graph 1). Along with their assets, OFEs' role in the domestic capital

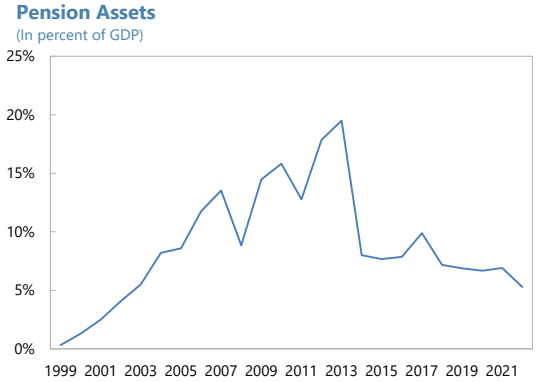
[10] Source: ZUS data. Self-employed defined as persons conducting non-agricultural business activity and persons collaborating with them. Persons under the civil law contracts defined as persons employed under a mandatory contract or agency contract or other contract for the provision of services.

[11] For contract of mandate: if an individual works under multiple contracts of mandate or contract of mandate overlaps with an employment contract, then social security contributions are required to be made from earnings up to minimum wage. For contracts to perform specified work: as this contract does not require any social contribution to be paid, workers working solely under a contract of specified work are excluded from various social protection rights and no pension contributions are made (Lewandowski 2018, page 20).

markets continued to increase, as assets were primarily invested in the domestic government debt securities and equities. For instance, OFEs' investment portfolio comprised about 60 percent of treasury securities and 34 percent of equities in 2007 (Sobolewski and Tymoczko 2012).[12] In 2014, however, Pillar 2 was scaled back by transferring about half of pension fund assets to Pillar 1 (Krogulski, et al. 2014)[13]. This, combined with the elimination of the requirement for mandatory participation in Pillar 2, led to a sharp decline in OFEs' assets in 2014 and a lasting decline in the number of OFEs and their membership afterwards. For instance, during 2017-24Q1 alone, the number of OFEs declined from 12 to 8, and their membership dropped from 16.4 million to 14.5 million. OFEs' assets declined sharply in 2014 and relatively stable afterwards in percent of GDP[14], registering about 6.5 percent of 2023 GDP in March 2024. Now, OFEs are heavily exposed to the domestic equity market, with 82 percent of their portfolio invested in domestic equities and another 10 percent in foreign instruments (Figure 5, graph 2). In the future, OFEs will likely continue downsizing amid the membership decline.

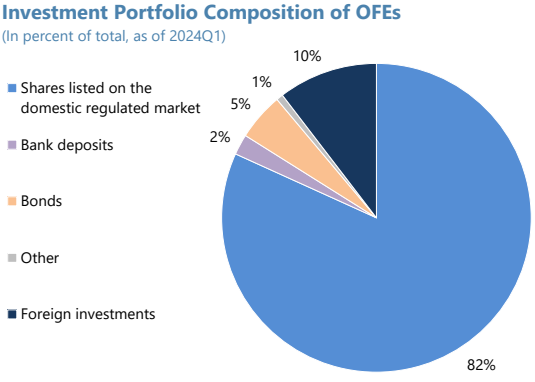
Text Figure 5. Assets of OFEs

OFEs' assets grew significantly since the early 2000, but, following the 2014 reform, have been substantially downsized.



Sources: Haver Analytics; Eurostat; and IMF staff calculations.

But most of their assets continue to remain invested in the domestic equity market.



Sources: KNF; and IMF staff calculations.

17. The growing importance of the voluntary pension scheme PPK has the potential to increase savings and counteract declining benefit ratios. The growth of PPK assets should partly offset the ongoing decline in Pillar 2 investments, and help create additional appetite for domestic securities and increase foreign investors' interest in the domestic capital market. This is because a larger presence of domestic institutional investors tends to increase the international demand for domestic securities, as foreign investors appreciate the presence of other strong players with different risk profiles, such as domestic pension funds. PPK not only may be able to mitigate

[12] Equities include here stocks, pre-emptive rights, bonds convertible to stocks. For details see Sobolewski and Tymoczko (2012, p131-132).

[13] The regulatory changes also included a redirection of contributions to Pillar 1 and centralization of the payout phase in Pillar 1, among others.

[14] Source: KNF quarterly bulletin data. In level terms, OFEs' assets grew gradually from PLN 180 bn in 2017 to PLN 222 bn in March 2024.

potential effects of diminishing OFEs on equity prices, but also create pension portfolios that are more aligned with the long-term interest of individuals (Gragnani and Rudolph 2019).

F. Conclusions and Recommendations

18. Under the current rules, implicit pension liabilities for the government could increase by some 6 ppts of GDP by 2050 to maintain pension adequacy. Long-term fiscal pressures from population aging will weigh on fiscal sustainability as implicit liabilities related to pensions are expected to increase. Both increases in longevity and declining aggregate employment lower pension benefits through automatic adjustments built into the NDC. Adjusting benefits to life expectancy at retirement and employment size will substantially lower future pensions in Poland. To counteract population ageing, pension expenditures would need to increase by about 6 ppts of GDP by 2050.

19. A comprehensive multi-pronged approach is needed to improve pension adequacy and slow the effect of population aging. Some potential measures include:

- *Equalize statutory retirement age for men and women and increase it over time with life expectancy*. Extending working lives through a gradual alignment of male and female statutory retirement ages and then increasing the retirement age in line with life expectancy gains while in good health would help lower the implicit fiscal cost of pension liabilities over the long-term. Estimated savings to public pension expenditures would be about 0.9 ppts of GDP by 2050 (Economic Policy Committee, Ageing Working Group, 2023).

- *Extend working lives and incentivize pensioners to work*. Without sufficient consensus to increase the statutory retirement age, efforts to increase the effective retirement age would be welcome, although they carry fiscal costs (tax incentives). Existing rules incentivize pensioners to work, which is welcome, but there are currently mixed messages in the pension system that should be realigned. On the one hand, the "PIT-0" scheme created a tax allowance for men and women aged older than the statutory retirement age who do not claim retirement or disability benefits and continue to work, thus, incentivizing pensioners to extend working lives. Although the fiscal savings are reduced by the cost of incentives provided (OECD 2023c). On the other hand, however, pensioners who work past their retirement age do not qualify for the 13th and 14th pension payment benefits, thus, disincentivizing working after reaching the statutory retirement age.

- *Introduce a minimum contributory period*. Currently, there is no minimum contributory period in place. This means that if a person contributed even a very small amount, they would receive it back with accumulated interest in pension payments upon retirement. However, even small transactions incur administrative costs. In addition, introducing a minimum contributory period may help improve the pension outlook and encourage workers to extend their working lives.

- *Pursue active labor market policies and increase labor participation*. Active labor market policies would help reduce the shadow economy, raise the labor force participation rate, and increase

contributors. There is scope to bring more older people and women into the labor force. For instance, removing barriers to young parents' working, such as improving the availability of affordable childcare and establishing options for elderly care, would help mobilize young parents into the workforce, particularly women. Promoting part-time work could also help younger generations (e.g., students) and young women caring for children and older people contribute more to the labor market and increase contributions toward future pensions.

- *Improve workers' skills and better integrate vulnerable groups into the labor market.* Lack of skills is often one the key contributors to early withdrawal from the labor market. Extending the period of labor market participation should be supported by lifelong learning and promoting best practices in training, as skills development is necessary for personal growth, labor market mobility, attractiveness to prospective employers, and higher quality of life. Greater mobilization into the labor market of persons with disabilities is also needed to increase their labor market participation.

- *Raise the minimum level of support for the poorest pensioners.* The 2023 Global Pension Index (Mercer CFA Institute 2023) ranks Poland relatively low on adequacy and sustainability, which may call for increasing pension adequacy for the poorest pensioners. Of course, this would come at a fiscal cost.

- *Promote and increase the level of household savings in the economy*. Despite the challenging outlook of the pension system, Poland continues to have one of the lowest household savings rates in the EU. Past policy reversals of pension savings, such as transferring Pillar 2 funds to Pillar 1, could be undermining confidence for participation in the voluntary pension pillar (OECD 2023c). For the future development of the third pillar, such as the PPK, it is essential to maintain regulatory stability to rebuild trust in the scheme, given that Pillar 3 can help improve future benefit ratios. Thus, workers should be reminded that, unlike Pillar 2, PPK funds are private and can be withdrawn at any time (tax-free if withdrawn upon reaching 60). Increasing financial education and communication to pension account holders about their pension prospects would also help raise awareness of their pension prospects and help incentivize private saving.

- *Base contributions of the self-employed on actual income*. This would help improve future pensions of the self-employed and close the gap between the self-employed and employees.

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