This Technical Note was prepared by Jose Antonio Gragnani and Heinz Rudolph, both World Bank, in the context of the Financial Sector Assessment Program in Poland during January and May 2018, led by Michael Moore, IMF, and Loic Chiquier, World Bank, and overseen by the Monetary and Capital Markets Department, IMF, and the Finance, Competitiveness and Innovation Global Practice, World Bank. It contains technical analysis and detailed information underpinning the FSAP’s findings and recommendations. Further information on the FSAP program can be found at www.worldbank.org/fsap
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**GLOSSARY**

<table>
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<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tr>
<td>BGK</td>
<td>Bank Gospodarstwa Krajowego - State Development Bank in Poland</td>
</tr>
<tr>
<td>CCP</td>
<td>Central counterparty</td>
</tr>
<tr>
<td>CD</td>
<td>Certificate of deposits</td>
</tr>
<tr>
<td>ESA</td>
<td>European system of accounts</td>
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<td>ETP</td>
<td>Electronic Trading Platform</td>
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<td>FSAP</td>
<td>Financial Sector Assessment Program</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GMRA</td>
<td>Global Master Repurchase Agreement</td>
</tr>
<tr>
<td>GPW / WSE</td>
<td>Giełda Papierów Wartościowych w Warszawie S.A. / The Warsaw Stock Exchange</td>
</tr>
<tr>
<td>IRS</td>
<td>Interest Rate Swap</td>
</tr>
<tr>
<td>KNF / FSA</td>
<td>Komisja Nadzoru Finansowego (the Polish Financial Supervision Authority)</td>
</tr>
<tr>
<td>MoF</td>
<td>Ministry of Finance</td>
</tr>
<tr>
<td>MREL</td>
<td>Minimum Requirements for Eligible Liabilities</td>
</tr>
<tr>
<td>NBP</td>
<td>National Bank of Poland</td>
</tr>
<tr>
<td>NFI</td>
<td>Non-financial institution</td>
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<tr>
<td>OFE</td>
<td>Open pension fund from the second pillar</td>
</tr>
<tr>
<td>OTC</td>
<td>Over-the-counter</td>
</tr>
<tr>
<td>PCN</td>
<td>Insurance Distribution Directive (EU Directive)</td>
</tr>
<tr>
<td>PFR</td>
<td>Polish Development Fund</td>
</tr>
<tr>
<td>PPK</td>
<td>Employee Capital Plan</td>
</tr>
<tr>
<td>Repo</td>
<td>Repurchase Agreement</td>
</tr>
<tr>
<td>SBB</td>
<td>Sell Buy Back</td>
</tr>
<tr>
<td>WIBID</td>
<td>Warsaw interbank bid rate</td>
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<tr>
<td>WIBOR</td>
<td>Warsaw interbank offer rate</td>
</tr>
<tr>
<td>WIG</td>
<td>Warsaw Stock Exchange Total Return Equity Index</td>
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<tr>
<td>ZUS</td>
<td>Social Security Agency</td>
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</table>
EXECUTIVE SUMMARY

In recent years, Poland’s government bond market has achieved significant progress. The domestic yield curve mainly spans up to 10 years for both fixed-rate and floating rate instruments. Between 2013 and 2017, the volume of outstanding domestic government debt grew from PLN 543 bn. to PLN 644 bn. Improvements in financial infrastructure, deliberate policies to issue sizable benchmarks for government bonds, and solid macroeconomic performance have helped to maintain a strong interest of foreign investors in local market securities. ¹

The development of the government bond market contrasts with corporate bond market, which remains shallow. The corporate sector is largely financed by retained earnings, bank lending, intracompany financing (external) or equity issuance. Corporate financing via bonds remains small compared with other sources of financing, and largely focused in midsize companies. In the presence of a solid base of local and foreign investors, and a good financial performance in the past few years, the lack of development of the corporate bond market is a consequence of a mix of market practices and regulatory issues.

The development of the non-government bond market requires several reforms, which should be aimed at improving efficiency, access, and resiliency of the domestic bond market. Achieving these objectives will require addressing several issues, including: (i) low liquidity of non-government bond market; (ii) limited capacity of investors to assess credit risk; (iii) weak presence of domestic institutional investors in some fixed income instruments, (iv) the complexity of trading platforms and excess of customization of transactions; (v) the perverse incentives of the tax framework; (vi) the lack of participation of some large institutional investors in the government bond market;² (vii) the limited development of the derivatives market, and (viii) the quality of information and dissemination to investors. Addressing these issues would involve cross-cutting actions in different market segments, government and non-government bond markets, repo market, derivatives and investor base.

Improvements in market infrastructure for trading of government bonds are crucial for improving price discovery and supporting the development of a yield curve. Although, the secondary market has shown some healthy liquidity, approximately 95 percent of government bonds are traded in the OTC market, which is characterized by limited post-trade information released to market participants. Since only total volume and number of transactions are disclosed, price information is limited. In addition, the organized market, which represents only 5 percent of the total bond transactions, is fragmented in four platforms of Catalyst and one platform dedicated to the primary dealers (Treasury BondSpot Poland). The lack of communication among these platforms does not support the development of price discovery and market liquidity. The four trading platforms (Catalyst) should be consolidated to improve efficiency.

¹ Foreign investors increased their allocations in government bonds from PLN 128 bn. to PLN 203 bn. between 2010 and 2017.
² OFE is a crucial segment to increase the liquidity and price discovery of government bonds in the secondary market, which is the base for capital markets development.
The lack of standardization of the bond prospects affects also the liquidity of the fixed income market. The adoption of the Global Master Repurchase Agreement (GMRA) documentation in all transactions with non-residents, and the standard documentation prepared by the Polish Bank Association in all contracts between residents would likely improve legal certainty in the fixed income market. Actions for expanding the use of securities as collaterals could improve the liquidity in the government and non-government bond markets.

The absence of a prime market for corporates reinforces the need for improving credit risk management practices among institutional investors. While in developed markets, bond market is primarily for prime companies, in the case of Poland, main issuers are medium and small size companies as prime companies either access directly the Euro market or get financing through banks. Considering that the corporate bond market might be riskier than other markets, strengthening investor protection and improving default resolution are critical for attracting greater investor demand. The development of a credit culture requires reliable credit ratings, which is the base for accurate price differentiation. In addition, regulation should encourage institutional investors to adopt high standards of credit risk management, in order to avoid excessive reliance on external risk management agencies. The introduction of alternative mechanisms for supporting liquidity, including call markets, should also be analyzed to concentrate market liquidity and price discovery at certain pre-established periods of the day.

The current structure of private placements of bond tends to cannibalize the public offering market. While the private placement market is supposed to be directed to qualified investors, current regulations allow circumvent these restrictions, allowing investors to reach indirectly the retail sector. Given the softer regulatory environment, the incentives for participating in the public offering market are limited. Private placements are not supervised by the KNF, have low requirements and help issuers speed up the placement. Some issuers prefer private placements as they can access up to 149 investors in the primary market but immediately after that, bonds can be freely distributed to unlimited investors in the secondary market. It is recommended to introduce a lock-in period for private offers and to require a notification for investment firms.

The largely use of the Central Counterparty (CCP) can support further development of hedging instruments, including interest rate swaps. A more developed derivatives market would support policies to strengthen bond market liquidity and investors’ capacity to manage risks. Although the interest rate swaps are relatively common in Poland, the further promotion of those standardized instruments could help to boost liquidity in the government bonds market. Expanding maturities and depth in this market may also require analysis of alternative reference rates. Overall, regulatory restrictions and knowledge gaps affecting the use of derivatives by different types of investors should be examined.

The asset tax is a significant constraint for the development of the fixed income market. A removal of the asset tax would facilitate the use of money market instruments and increase efficiency in the overall development of the fixed income market, including government and non-government securities. The burden imposed by the asset tax on banks and insurance companies makes cross-month repo transactions expensive. Although this tax impacts directly only these two

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3 An overnight rate future contract could be a powerful instrument to improve the development of the Polish bond market, but it requires coordinated actions by MoF, NBP and WSE.
segments of institutions, it has indirect effects on other segments and instruments. The effect of the tax on the repo market has also consequences on the development of the fixed income market.

**Banks have been net issuers (rather than net investors) of debt instruments, and this trend is likely to continue.** As investors, banks purchase government bonds (waived from the asset tax). As issuers, they issue covered bonds to refinance their portfolio of local currency mortgage loans.\(^4\) In addition, banks will have to get funding to fulfill the requirements of the Minimum Requirements for Eligible Liabilities (MREL), which will imply bank (subordinated) debt issuance for amounts in a range of PLN 60 billion to 80 billion until 2023.

**The main non-bank domestic institutional investors include open pension funds (OFE), insurance companies and investment funds.**\(^5\) Domestic institutional investors manage assets of PLN 681 billion, as of December 2017. While open pension funds are likely to be further downsized, investment funds have been booming in the country. On the other hand, the insurance sector has shown a small growth during this decade. While open pension funds are largely invested into equities, the other two investors hold larger exposures to government securities.

**Polish Development Fund (PFR) can play a catalytic role in engaging domestic institutional investors in the financing of infrastructure.** As the infrastructure funds from the European Union start to phase out, it is essential to build domestic capacity among institutional investors for financing infrastructure. Creating working groups conducive to the development of financial vehicles with adequate risk sharing among different stakeholders is recommended, also to familiarize investors with the asset class. The WSE is proposing the issuance of project bonds to finance projects to connect rivers and channels. A concession would be granted to a private company that issues project bonds - annual coupons would be guaranteed by the state - and bonds would be treated as eligible collateral by the NBP. Even if this latter does not translate as a direct funding source, it would expose the NBP and should not be pursued further.

**The introduction of a voluntary funded pension scheme (PPK) with the automatic enrollment features is a positive initiative.** The program should help to increase national savings and will offset the declining replacement rates for pensioners receiving benefits from the social security system. However, authorities should not underestimate the implementation risks of the program. The imposed timeframe is tight, as PPK are expected to start running in July 2019 or six months after enacting the law. This leaves little room for the preparatory work, in terms of developing and testing the IT systems and platforms; putting in place the settlement system at Polish Development Fund (PFR); licensing of pension fund managers; enacting regulations for participants; setting up the new supervisory framework; and creating and launching educational a communication campaigns, among other functions.

**One immediate challenge is to determine the governance of the portfolio benchmarks for the PPK, which should aim at optimizing the future overall pension of individuals.** Neither the government nor the supervisor can take this decision alone. Ideally, an agreement should be reached with experts and social partners that can be sustainable in terms of the objectives, but

\(^4\) Banks plan to issue more covered bonds, from approximately PLN10bn to PLN50bn - assuming a 20 percent refinancing (current stock of mortgage loans is PLN254bn).

\(^5\) It also includes occupational pension funds and voluntary pension funds, but they are currently relatively small.
flexible by ensuring that it takes into consideration changes in market conditions. The risk of the portfolio should consider the expected pensions offered by the Social Security System (ZUS).

**Setting up annuities as a default option of the PPK system could improve the welfare of participants and create a new set of institutional investors with long term horizons.** Instead of offering a plan with 25 percent conversion factor at the moment of retirement and 120 equal installments in the following 10 years, which provide no longevity protection to participants, the government could consider an annuity as a default option, and a protection against longevity risk.

**Few other areas for improvement can make the PPK system more functional to future retirees.** First, the industrial organization of the fund management industry is based on the OFE model and replicates some of the problems that affected the second pillar in the past. Second, a more precise definition of the areas where the PFR may effectively add value might be necessary. Third, the introduction of performance fees is not helping in defining the long-term asset allocation of the pension funds. Finally, since the PPK is part of the pension system it is essential a stronger payout phase, so individuals can effectively have better pensions and longevity risk protection.
## Key Recommendations

Table 1. Poland FSAP 2018

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Agency</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Market Development</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Capital Markets</strong></td>
<td></td>
<td></td>
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<tr>
<td>Remove the effect of the asset tax on fixed income instruments</td>
<td>MoF</td>
<td>I</td>
</tr>
<tr>
<td>Standardize and simplify the repurchase agreement at all levels</td>
<td>PFSA, MoF, Domestic Financial Institutions</td>
<td>NT</td>
</tr>
<tr>
<td>Reduce the government bond fragmentation</td>
<td>MoF</td>
<td>MT</td>
</tr>
<tr>
<td>Improve market information on OTC</td>
<td>MoF</td>
<td>NT</td>
</tr>
<tr>
<td>Remove the pension funds’ prohibition to invest in government bonds</td>
<td>MoF,</td>
<td>NT</td>
</tr>
<tr>
<td>Review the potential gaps in regulation of private placements of bonds and consider the imposition of a notification requirement(^6) and a lock-in period</td>
<td>MoF, -</td>
<td>I</td>
</tr>
<tr>
<td>Merge the Catalyst platforms</td>
<td>WSE, PFSA</td>
<td>NT-MT</td>
</tr>
<tr>
<td>Assess the introduction of a periodic call market for corporate bonds</td>
<td>WSE Group, MoF, NBP, PFSA</td>
<td>NT</td>
</tr>
<tr>
<td>Assess the creation of future contracts of overnight interest rate</td>
<td>WSE, MoF, NBP, PFSA</td>
<td>NT</td>
</tr>
<tr>
<td><strong>Employee Capital Plans (PPK)</strong></td>
<td></td>
<td></td>
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<tr>
<td>Reduce the implementation risk of PPK reform</td>
<td>MoF, PFR</td>
<td>I</td>
</tr>
<tr>
<td>Design the default option for the payout as an annuity</td>
<td>MoF</td>
<td>I</td>
</tr>
<tr>
<td>Introduce investment limits into secondary regulations</td>
<td>MoF, PFSA</td>
<td>I</td>
</tr>
<tr>
<td>Separate account management and asset management functions</td>
<td>MoF, PFR</td>
<td>I</td>
</tr>
</tbody>
</table>

Time Frame: C = continuous; I (immediate) = within one year; NT (near term) = 1-3 years; MT (medium term) = 3-5 years.

\(^6\) See Poland FSAP “Technical Note: Supervisory Review on Capital Markets” – August 2018
I. INTRODUCTION AND BOND MARKET OVERVIEW

1. Poland’s capital markets can play a crucial supporting role to the ongoing economic development and efficient allocation of credit. Capital markets will become increasingly important to meet the long-term funding needs of strategic sectors, including large, medium and small entities. Expansion and diversification of capital market instruments and hedging tools will also be essential to provide adequate investment and risk management vehicles to much needed long-term savings. While capital market offers different sources of financing, this note focuses primarily on the fixed income markets.

2. Poland’s fixed income domestic markets have achieved substantial progress in recent years. The domestic yield curve mainly spans up to 10 years for both fixed-rate and floating rate instruments. The volume of outstanding domestic government debt and corporate debt grew from PLN543bn to PLN644bn and from PLN38bn to PLN71bn, respectively, between 2013 and 2017. Despite this relative progress, corporate bond markets remain modest compared with other sources of financing for corporates. The improvements on financial infrastructure\(^7\) have strengthened the market and the growth has been supported by the government bond benchmarks\(^8\) and an increasing foreign investors’ appetite for local instruments.\(^9\) Although further growth corresponds to an explicit government economic priority, a comprehensive policy is not ready yet, with different challenges in each segment of the fixed income markets to be addressed.

3. The bond market comprises a significant share of debt issued by government-related issuers and a still small set of instruments issued in the non-government bond market. Bonds issued by the central and municipal governments account for 83.8 percent of the overall stock outstanding as of end of 2017. The non-government bond market has been growing relatively faster through the issuance of a variety of instruments, including bank, corporate and cover bonds, however the stock remains incipient indicating that there is great room for development. Most corporate bonds are issued by medium and small entities through private placements.

4. Banks and non-resident investors are the main holders of the outstanding government bonds. Local banks and non-resident investors accounted for 39.3 and 32.6 percent of the domestic T-securities stock in 2017, respectively. The institutional (non-banking) investor base is composed mostly of insurance companies and investment funds that hold about 24.6 percent. Open pension funds are prohibited to invest in government bonds. Each segment of institutional investors has still considerable potential to grow (e.g. investment funds and insurance), including the existing and upcoming pension funds if authorities permit their participation.

5. Non-government bonds are mostly held by banks, investment funds and non-financial institutions. However, banks are still net issuers rather than net investors on non-government

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\(^7\) In 2011, KDPW split into a clearing house (KDPW_CCP, which has been authorised under European Market Infrastructure Regulation in 2014) and a central securities depository (KDPW, which is in the process of authorisation under Central Securities Depository Regulation); Consolidation of public finances liquidity management; KDPW Trade Repository was registered in ESMA

\(^8\) The current benchmark size is PLN25bn

\(^9\) Foreign investors increased their allocations in government bonds from PLN128bn in 2010 to PLN203bn in 2017.
bonds. As investors, banks purchase government bonds (waived from the asset tax). As issuers, they plan to issue more covered bonds - from about PLN 10 to 50 billion - to refinance a larger proportion of local currency mortgage loans. Banks also face Minimum Requirements for Eligible Liabilities (MREL), estimated to correspond to bank subordinated debt issuance and equity capital of about PLN 60 to 80 billion until 2023. In addition, non-bank medium and large corporate express interest to make a more active use of corporate bonds to diversify their funding. Investment funds are also relevant investors in non-government bonds, as these assets have higher yield than government bonds and permit them to charge elevated management fees. Non-government bonds are also used by entities from the capital group of issuers (non-financial institutions) to transfer funds among them.

6. **Bonds are transacted in five trading platforms and in the OTC market and participants have limited access to information.** Bonds are transacted in four platforms of Catalyst and on Treasury BondSpot Poland, the latter with access limited only for market makers that want to deal with government bonds. Therefore, the organized market in Poland is fragmented and represents only 5 percent of the total government bond transactions. It should be reorganized in order to improve its efficiency. In parallel, the limited level of information available about transactions in the secondary market may be a constraint to diversify the investor base and expand the demand.

7. **This technical note is structured as follows.** Section II covers each of the main market segments, including money markets, government and non-government bond markets and derivatives markets. Section III provides an examination of the investor base, the current participation of the different investor segments in the bond markets, and recommendations to reach broader and more effective investor diversification. The Section IV is focusing on the critical reform of the Employee Capital Plan (PPK), as one critical group of institutional investors.

### II. ISSUES BY MARKET SEGMENTS

#### Money Markets

8. **An efficient money market supports the implementation of monetary policy, is critical for liquidity management by banks, firms and households, and is the cornerstone for the development of capital markets.** Well-functioning money markets can, inter alia: (i) enhance the effectiveness of liquidity management tools by central banks and other market participants; (ii) expand the capacity of market players to finance and hold portfolios of longer-term debt securities; and (iii) provide price references for the short-term of the yield curve and for the creation of products such as floating-rate bonds and hedging tools that facilitate the development of capital markets.

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10 Assuming a 20 percent refinancing (current stock of PLN254bn of PLN mortgage loans), compared to 4 percent now
A. Current Arrangements

9. The scope of the Narodowy Bank Polski’s (NBP)’s activities are stipulated in the Act on Narodowy Bank Polski and the Banking Act. The main objective of the NBP is to maintain price stability. To reach this objective, the NBP develops and implements a monetary policy strategy, protects the stability of the financial system, and oversees the liquidity, efficiency and security of the payment system, among other tasks.

10. The NBP plays a central role in Poland’s money markets through a variety of monetary policy instruments. It operates with an aim to keep the POLONIA rate running close to NBP’s reference rate. The NBP manages liquidity in the market mainly through Main operations, typically through 7-day NBP bills tenders, but also through ‘Fine-Tuning’ operations, i.e. issuance of NBP bills with shorter maturities (Figures 1 and 2). Banks are also eligible for an overnight facility at the refinancing Lombard rate. Collateral for these facilities include a defined range of assets, i.e. Treasury securities, securities issued by NBP, municipal bonds, covered bonds and corporate bonds with a high credit rating (Table 1). The interest on this credit determines the marginal cost of obtaining funds from the central bank, which constitutes the ceiling for the overnight market rate. Banks may also use the overnight deposit facility that enables to deposit liquidity surpluses with the central bank on an overnight basis. The interest on the overnight deposit constitutes the floor for the market rate determined for this period. ELA is subject to policies set out in NBP’s internal contingency plan. The ELA facility is granted at the discretion of the NBP Board, can be collateralized also by other assets (including loans), and carries interest at 100 basis points over the Lombard rate. All banks are eligible to be considered to be granted ELA. By policy ELA can be extended for up to 90 days, though the Board may approve a longer (or shorter) period and will consider an application for an extension. The NBP has well defined policies and procedures for determining collateral eligibility and asset-specific haircuts. Asset eligibility, haircut and collateral documentation criteria have been communicated to banks, which are required to be able to meet promptly the documentation requirements. Banks’ ability to do so is assessed by the KNF.

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11 Under the Monetary Policy Strategy beyond 2003 drawn up by the Monetary Policy Council, the objective of the NBP is to stabilize the inflation rate at 2.5 percent with a permissible fluctuation band of +/- 1 percentage point.
Figure 1

**Table 1: Haircut level - Lombard Credit (%) (applied to the nominal value)**

<table>
<thead>
<tr>
<th>Securities denominated in PLN</th>
<th>Period remaining to maturity</th>
<th>Zero coupon bonds</th>
<th>Coupon bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>up to one year</td>
<td>over one year</td>
</tr>
<tr>
<td>Treasury bonds</td>
<td></td>
<td>6.0</td>
<td>11.5</td>
</tr>
<tr>
<td>Treasury bills and NBP bills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BGK bonds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>18.0</td>
<td>34.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bonds denominated in EUR</th>
<th>Period remaining to maturity</th>
<th>up to 3 years</th>
<th>3-7 years</th>
<th>7-15 years</th>
<th>15-30 years</th>
<th>over 30 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treasury bonds</td>
<td></td>
<td>9.0</td>
<td>11.0</td>
<td>16.0</td>
<td>23.0</td>
<td>33.0</td>
</tr>
</tbody>
</table>

11. **The NBP is actively involved in the money market, frequently as one of the most important players.** The NBP conducts weekly 7-day Main open market operations and influences the rates on the overnight segment of the unsecured interbank deposit market, which is the base for the POLONIA rate formation, published daily by NBP at 5pm. Short-term debt instruments represent more than 85 percent of such securities held by investors at end of 2016.\(^{12}\)

12. **The POLONIA rate is a weighted average of overnight rates, calculated by the NBP.** Twenty banks\(^ {13}\) report to NBP their activities within the overnight rates of transactions concluded

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\(^{12}\) According to NBP data.

before 4:30pm in the unsecured interbank deposit market. The fixing of the POLONIA rate is set on each business day around 5 PM, unless NBP decides otherwise. The rates sent by the panel banks ought to be quoted in accordance with the Polish money market interest rate convention (ACT/365), with to 2 decimal points. There is no formal commitment on how far NBP’s reference rate may deviate from the POLONIA rate before ad-hoc market operations. In 2017, the average absolute spread between both rates was 12 basis points.\(^\text{14}\) The POLONIA rate is the reference used for overnight transactions and overnight indexed swaps.

13. **Warsaw Interbank Offered Rate (WIBOR)**\(^\text{15}\) and **Warsaw Interbank Bid Rate (WIBID)** are reference rates determined by a panel of ten (10) panelists.\(^\text{16}\) Every day, money panelists submit their rates to borrow (bid) and lend (offer) to another fixing participant for the following maturities: a business day (overnight, t+1), a week, two weeks, and one, three, six, nine and twelve months. The bid-ask spread must not exceed 0.3 percent and 0.2 percent for overnight rates (overnight, t+1) and for maturities from a week to twelve months, respectively. The reference rates are the arithmetic mean of the rates calculated by the GPW Benchmark\(^\text{17}\) and the fixing of WIBOR and WIBID rates are set on each business day at 11am.\(^\text{18}\)

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\(^{14}\) According to NBP data.

\(^{15}\) The WIBOR rates have been calculated since 1991. The Administrator of the rate is GPW Benchmark SA. Before June 30, 2017, ACI Polska Association (previously known as The Polish Association of Bank Dealers FOREX POLSKA) was responsible for the fixing of the WIBOR rate.


\(^{17}\) GPW Benchmark S.A. is a member of the Capital Group of the Warsaw Stock Exchange S.A. responsible for developing the reference indicators for the Polish financial market. The core business of GPW Benchmark S.A. is the administration of the process of developing the WIBID and WIBOR reference rates.

\(^{18}\) The quotations of PLN deposits rates as well as WIBOR and WIBID rates shall be submitted by the panel banks in the form of percentage in accordance with the convention applicable on the Polish monetary market and rounded to two decimal places. Unless the GPW Benchmark (calculating agent and administrator) decides otherwise, fixing of WIBOR and WIBID rates for PLN deposits shall take place on each business day at 11:00 am. For the period of 15 minutes after the disclosure by the administrator of the results of the fixing to the fixing participants each of them can conclude the transaction with one another (based on submitted rates). On the fixing day by 11:00 am each panel bank shall provide the GPW Benchmark with one rate at which the panel bank wishes to lend to another panel bank (the offer rate) and borrow from other panel bank (the bid rate) a PLN deposit for all the maturities outlined above. WIBOR and WIBID reference rates for a given maturity shall be computed by the GPW Benchmark as the arithmetical mean of the rates quoted by the panel banks on a given day (the rates at which the panel banks wish to lend or borrow to other panel bank a PLN deposit for a given maturity within the first fifteen minutes after the WIBOR and WIBID reference rates are disclosed by the GPW Benchmark to them) net of: (i) the two lowest and the two highest quotations in the event the GPW Benchmark has received at least ten quotations; and (ii) the one lowest and the one highest quotation in the event the GPW Benchmark has received eight or nine quotations. WIBOR and WIBID are calculated as the arithmetical mean of all rates quoted by the panel banks on a given day, if six or seven quotations have been proposed. WIBOR and WIBID reference rates set in the fixing process on a given day shall be published on the same day within the first fifteen minutes after the fixing process. Key aspect of the WIBOR and WIBID methodology is that within the first fifteen minutes after the WIBOR and WIBID rates have been disclosed by the GPW Benchmark to the fixing participants, each of them can conclude one or two transactions at the quotation of each other panel bank with two different maturities. Panel banks can be released from the abovementioned obligation if (i) the limit for PLN deposits granted to the panel bank who enquires about quotations has been utilized (then only a rate is quoted at which
14. **WIBOR and WIBID are widely used as reference rates and some regulatory changes are currently underway.** Corporate and consumer credit, loans, bonds and derivatives as well as investment funds use WIBOR and WIBID as reference rates. The rates are currently being adapted to the requirements of the regulation. The "New documentation of reference rates" was one of the recently implemented changes and came into force on February 1st, 2018 to replace the previous regulations of the process of determination of the rates.

15. **NBP-bills are traded in the interbank market through outright, repo, and sell-buy back (SBB) transactions.** The latter two types of transactions are sometimes collateralized with NBP-bills and are essentially the same, except for the difference of prices caused by the treatment of coupons. Moreover, repurchase agreements are always evidenced by a written contract whereas a sell-buy back may or may not be documented. GMRA documentation is used in transactions with foreign institutions and Recommendation on concluding Repo and Buy/Sell Back transactions on the Polish financial market, a standard documentation developed by the Polish Bank Association, is used in transactions between domestic banks. Undocumented SBBs are popular among local non-bank financial institutions. The data since 2004 evidenced the market preference for outright and SBB. The maximum volume traded in repo was 11 percent and the average since then is 5 percent. The recent amounts traded keep the same profile: the total amount traded in March 2018 reached PLN946bn, with outright, SBB and repo accounting for PLN305bn, PLN578bn and PLN63bn respectively (Figure 3).

**Figure 3**

![Value of Transactions* in the Secondary Market](image)

*Source: Ministry of Finance*

14. a given panel bank wishes to borrow a deposit); and (ii) information which can have a material impact on interest rates on the Polish money market is conveyed in the public media within the first fifteen minutes after the fixing process.

16. Domestic banks and domestic non-bank financial institutions are the main participants in repo and SBB markets. They use this transaction to allocate surplus funds or to cover temporary liquidity shortfalls, sometimes also to speculate on interest rate changes using leverage.

17. The unsecured depo market is widely used by banks to manage their daily positions, but the asset tax increased the effective cost of financing via this channel. Overnight transactions are predominant, accounting for about 96 percent in February 2018. The recent financial crisis affected the turnover and changed market participants’ preference towards short-term transactions. The introduction of the new asset tax\(^{20}\) in February 2016 also redirected bank and insurance company’s asset allocations to government bonds rather than other investments, including longer-term deposits.

B. Pending Issues and Recommendations

18. Some aspects need to be addressed to ensure the healthy development of the money market. Key challenges include the lack of harmonization of documentation and the presence of a severe tax distortion.

19. Standardization of repo instruments would harmonize transactions among domestic and non-domestic financial institutions. The adoption of GMRA documentation in all transactions with non-residents, and the standard documentation prepared by the Polish Bank Association in all transactions between residents would be a significant advance. Government efforts to enhance familiarity and understanding of these instruments should be made and, to the extent possible, procedures should be standardized and simplified.

20. The introduction of the asset tax has led to a temporary decline in the turnover of money market instruments, affecting the efficiency of the overall capital markets. The cost of the asset tax makes cross-month repo transactions less efficient the overall development of the capital markets. The impact of the cost can be even worse for shorter maturities (Table 2). Therefore, the same asset can have different prices depending on their maturity, which makes more difficult the definition of the asset prices. The removal of the asset tax would facilitate the use of money market instruments and improve the liquidity of the fixed income products.

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\(^{20}\) Banks and insurance co. must pay monthly 44bps/year over the assets. The assets are calculated according to this formula: (total assets – fixed amount (PLN4bn for banks, PLN2bn for Insurance companies, PLN200mn for lending institutions) – own funds – government bonds (only for banks; insurance companies can’t reduce investments in government bonds)) * 0.44% * 365 / maturity of taxable transactions in days. In both transactions, repo and SBB transactions, the buyer of the collateral (bank or insurance company) must pay the asset tax. The same responsibilities apply in the case of purchases of NBP-bills, as central bank instruments are also not exempt of asset tax.
Table 2: Asset Tax cross-month Cost of the Deposits\textsuperscript{21}

<table>
<thead>
<tr>
<th>Tenor</th>
<th>Maturity of taxable deposits in days</th>
<th>Tax cost of the deposit (% annual basis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>O/N</td>
<td>1</td>
<td>13.36</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6.68</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>4.45</td>
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<tr>
<td></td>
<td>4</td>
<td>3.34</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>2.67</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>2.23</td>
</tr>
<tr>
<td>1W</td>
<td>7</td>
<td>1.91</td>
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<tr>
<td></td>
<td>8</td>
<td>1.67</td>
</tr>
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<td></td>
<td>9</td>
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<td></td>
<td>10</td>
<td>1.34</td>
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<td>1.21</td>
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<td>13</td>
<td>1.03</td>
</tr>
<tr>
<td>2W</td>
<td>14</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Government Bond Markets

21. The government bond market is an important pillar for the development of capital markets. A sound government bond market: (i) provides a solid yield curve and price references for the valuation of investment portfolios and for the development of private sector products such as corporate bonds and structured securities (e.g. mortgage backed securities); (ii) enhances the availability of instruments to support liquidity management by different market participants, including repo transactions; and (iii) facilitates the implementation of monetary policy.

A. Current Arrangements

22. Poland’s State Treasury debt to GDP at 46.8 percent is lower than the average across Europe,\textsuperscript{22} and is predominantly denominated in local currency but with non-negligible FX exposure. In nominal terms, the total outstanding State Treasury debt reached PLN928.5bn as of December 2017, consisting of PLN644.5bn in domestic debt and PLN283.9bn in foreign debt (Figure 4). Local debt comprised 69.4 percent of the total debt and the marketable domestic securities accounted for PLN605.4bn or 94 percent of the local debt. Foreign debt comprised 30.6 percent of the total debt but only PLN213.2 or 75 percent of that is composed by marketable foreign securities (Figure 5). While the debt to GDP ratio below the EU average is positive from

\textsuperscript{21} The table presents the asset tax cost of the deposits per number of days on annual basis if the resources are not invested in government bonds.
\textsuperscript{22} The total State Treasury debt to GDP ratio is 46.8 percent. The General Government Debt to GDP ratio in Poland and in the European Union is 50.6 and 81.6 percent respectively, in 2017.
a macro-fiscal perspective, from the domestic government debt market development perspective it brings the need to keep the high level of efficiency on primary and secondary market policies to ensure a sufficiently liquid yield curve at different maturity segments.

Figure 4

![State Treasury Debt according to the Place of Issue Criterion (PLN bn)](chart)

Source: Ministry of Finance

Figure 5

![State Treasury Debt by Instrument](chart)

Source: Ministry of Finance
23. **The domestic government debt is composed of fixed rate, inflation-linked, and floating rate bonds.** Fixed rate bonds are predominant in the domestic debt composition, but participation has been lowered since 2010, from 83.3 percent to 73.4 percent in the first quarter of 2018, while floating rate bonds have grown from 13.7 percent to 25.9 percent over the same period (Figure 6). Investors’ growing risk aversion, the pension system reform, and the remittance of the part of Treasury securities held by open pension funds were issues that contributed to the increase in growth of floating-rate government bonds in the domestic market.

![Figure 6](image)

24. **The MoF offers a package of bonds in bi-weekly auctions exclusively for primary dealers and Bank Gospodarstwa Krajowego (BGK - State Development Bank in Poland).** They usually announce 5 on-the-run bonds per auction, 3 tenors (2-, 5- and 10-year) of fixed-rate and two floating-rate bonds. Additionally, a longer than 10 years or inflation-linked bond can be offered as six bond types, depending on the market demand. The announced offer contemplates the total amount for all the bonds and a sale of a single issue at an auction cannot exceed 50 percent of the supply range for a given auction. T-bills are offered on an irregular basis, depending on budget and market situation. All T-bond and T-bill sale auctions are carried out in uniform price, however buy-back auctions are using multiple price method. As the direct access to auctions is limited to primary dealers and BGK, investors can only bid through them. The MoF may organize a non-competitive auction of government bonds no later than the following day of the competitive auction, with offer up to 20 percent of the initial auction supply, at the price accepted in the primary market, exclusively for primary dealers and BGK.

25. **The MoF uses reopenings to strengthen the yield curve, but benchmark sizes are not homogeneous.** The outstanding government debt is composed of 22 fixed-rate, 9 floating-rate and one inflation-linked bonds distributed in tenors up to 2047 (Figures 6 and 7). The bonds are distributed well in order to avoid demand cannibalization among tenors. There are outstanding

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23 Approximately PLN 130bn of T-bonds were cancelled in 2014
24 Cannibalization can happen when two or more tenors, mainly medium and long-term, have close maturity dates and the term spreads are small.
bonds with volumes lower than PLN20bn, although some of them still on-the-run, and other ones exceed PLN25bn (Figures 7 and 8).

Figure 7

![Stock of Domestic Government Bond (Fixed Rate)](source: MoF)

Figure 8

![Stock of Domestic Government Bond (Floating Rate)](source: MoF)

26. **Liability management operations, such as switches are frequently used by the MoF.** These operations allow MoF to build larger benchmarks faster and alleviate refinancing risks as well as strengthen the price formation of the yield curve. In 2017 and as of May 2018, the MoF conducted several switch auctions and exchanged PLN60bn.

27. **There are 13 primary dealers (PD)**\(^{26}\) responsible for increasing the competition in the primary market and promoting liquidity in the secondary market. They have as main benefits: (i) exclusive right to use the title of a PD (as long as the agreement on fulfilling the PD role is in effect); (ii) exclusive right to submit bids in all treasury securities auctions, including switches and buy-backs; (iii) purchase of treasury securities at non-competitive auctions; (iv) exclusive rights or preferences in concluding individual transactions with the Minister of Finance (e.g. hedging, private placement transactions, securities issuances on foreign markets, etc); and (v) participation in Market Participants treasury securities council’s to discuss borrowing needs, issuance policy, etc. As the main obligations, they need to: (i) bid in T-bill and T-bond auctions and purchase a minimum amount each quarter; (ii) submit bid and offer prices for benchmark treasury securities on the electronic market for at least 5 hours a day; (iii) participate in everyday fixing sessions of treasury securities; (iv) quote bid/offer treasury securities prices at any request of the Minister of Finance; and (v) promote the treasury securities market. The activity on the secondary market is measured by a quality quotation index – algorithm that evaluates activity based on the weighted mean of spread, volume (25%) and of quoting time. Nevertheless, the 2-way prices provided by primary dealers are *de facto* indicative, as these quotes are not placed in a proper electronic trading platform with “hit-and-trade” quotes. The transactions mostly happen in the OTC market.

28. **Holdings of domestic government debt remain strongly concentrated in local banks and non-resident investors** (Figures 9 and 10). Banks and non-residents are the main holders

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\(^{25}\) For a detailed discussion on buybacks and switches including international practices, see “Bond buybacks and exchanges”, WB government bond market development program, background note.

with 39.3 and 32.6 percent respectively, in 2017. The domestic institutional (non-banking) investor base holds 24.6 percent of the total domestic debt. The portfolio allocations to government securities by insurance companies and investment funds are relatively limited, 34.3 and 17.8 percent respectively, and negligible by pension funds, 1.2 percent. Banks tend to hold shorter term securities, while non-residents dominate holdings of instruments with longer maturities.

29. **Despite the existence of electronic trading platforms, secondary market trades are concentrated in the OTC market (Figures 11 and 12).** The average monthly turnover of government bonds in the secondary market has grown, from PLN405bn in 2009 to PLN945bn in March 2018 (Figure 23). However, the average monthly turnover ratio\(^\text{27}\) has decreased slightly since 2014, from 188% to 148% of the total marketable government bonds in 2017. As mentioned above, trades are predominantly conducted in OTC markets, representing 95.1 percent in 2017, and the small volume negotiated in the exchange is almost 100 percent in the Treasury BondSpot Poland (TBSP), the business-to-business platform. There were 33 global and local financial institutions\(^\text{28}\), mainly banks, participating in the TBSP in 2017. According to the TBSP regulation, the minimum lot permitted to be traded in the ETP must be PLN5mn, but the average size of transaction was PLN20mn in 2017. Government bonds can also be traded on the four trading platforms of the Warsaw Stock Exchange and BondSpot that comprise the bond market Catalyst\(^\text{29}\) but the volume transacted is insignificant, less than 0.1 percent of the total turnover.

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27 Average monthly turnover ratio is the average monthly turnover divided by the stock of outstanding marketable securities.
28 The TBSP market admits the participation of entities authorized to provide investment services and activities (market makers / takers) or credit institutions, investment firms, other authorized or regulated financial institutions, such as insurance companies, collective investment schemes and management companies of such schemes, pension funds and management companies of such funds, commodity and commodity derivatives dealers, locals and other institutional investors (as institutional investors). In 2017, there were 21 market makers on the cash market (including 14 Treasury Securities Dealers), 5 market takers on the cash market and 7 institutional investors (2 on the institutional cash market, 5 on the cash and conditional market, 1 on the cash market).
29 The bond market Catalyst comprises two platforms operated by the WSE (a regulated and an alternative trading system) dedicated to retail investors and two BondSpot markets (regulated and ATS) dedicated to wholesale investors.
30. **The information available about the secondary market of government bonds is limited.** The Warsaw Stock Exchange releases information of the government bonds traded in the ETPs on a daily basis, but this market represents a small part of the transactions in the secondary market. The OTC market concentrates the majority of the volume traded, however market participants only know the total volume and the number of transactions. The lack of proper information disclosure may make price discovery more difficult and be a barrier for new entrants.

### B. Pending Issues and Recommendations

31. **Authorities should assess periodically the effectiveness of the current auction mechanism of government securities.** The current auction announcement defining the amount for all bonds offered instead of the volume for each tenor, strategy adopted by some countries after the global crisis, gives more flexibility to the MoF in the allocation of overall supply in auctions. However, this methodology clearly presents trade-offs that may affect bidding strategies of different participants in the market, warranting rigorous empirical analysis on a periodic basis. Some market participants indicated that during turbulent periods, uncertainty regarding amounts to be sold on each security may complicate pricing their bids, exactly at a time when secondary market is less liquid and volatile. Lack of reliable secondary market references and uncertainty on exact supply of each bond enhance the risk of winner’s curse and may lead to conservative bidding (higher yields) and lower demand.

32. **Liquidity and demand in government bond markets would tend to be higher without the asset tax.** The burden imposed by this tax on banks and insurance companies makes cross-month repo transactions expensive even if the collateral is a government bond, increasing the complexity of the cash-flow management in order to avoid additional costs when they need to finance their portfolio. Therefore, the asset tax may affect the demand in the primary market as well as the liquidity in the secondary market. The removal of the asset tax would facilitate the use of money market instruments and increase efficiency in the development of the government bond market. Moreover, the asset tax makes more difficult primary dealers and market makers comply
with their obligations as they need to adjust their portfolio and cash flow to limit the access to the money market instruments. In addition, as the asset tax base for domestic banks is reduced by the value of government bonds\textsuperscript{30}, the development of corporate bond markets is also affected, as banks compare the profitability of instruments on a net of tax yield base.

**33. Removing open pension funds’ prohibition to invest in government bonds would support more competition and better price formation in the government debt primary market.** In general, open pension funds’ participation is crucial to the debt maturity profile as they usually are medium- and long-term investors. Although in Poland this segment focus on medium-term investments, the debt management may be more vulnerable to refinancing risks in turbulent periods without their participation as foreigners are relevant bondholders. Moreover, the volume of floating rate government bonds has increased annually and after the prohibition of the pension funds to invest in government bonds the stock reached 25.9 percent. The percentage is still under control, however higher participation of floating rate bonds may make fiscal policy more fragile.

**34. A homogeneous benchmark size could improve conditions for a deeper and more liquid yield curve.** There are 32 outstanding bonds in the domestic market, including discount, inflation-linked, fixed- and floating-rate bonds (Table 3). The current benchmark size defined by the MoF is PLN25bn, however only 13 of the outstanding bonds reached this volume\textsuperscript{31} The MoF could analyze the possibility of increasing the volume of the other bonds or use liability management operations, such as buy-backs and switches, to strengthen benchmarks, improve price formation and the yield curve.

\textsuperscript{30} Domestic banks can deduct up to PLN4bn of the value of governments bonds to calculate the asset tax base. Therefore, the effective profitability of those instruments for domestic banks is greater than the profitability of other debt instruments with similar yields, which means that banks tend to request higher returns to increase their allocations in non-government instruments, affecting the fixed income market development.

\textsuperscript{31} The series in yellow are the current on-the-run bonds. So, the volume of these tenors has not been completed yet.
35. On the secondary market, there is scope for improving transparency. 95 percent
of transactions take place in the OTC market, where intermediaries are only required to report
volumes and numbers of transactions. Providing in a website to be accessed by everyone,
consolidated post-trade information of transactions made in the OTC and ETP markets on a daily
basis, such as traded volume, number of transactions, minimum, average and maximum prices
of transactions, improve the price discovery and market liquidity, strengthen the yield curve and
increase the investors’ base.32

36. The individual segments of the bond market trading platform, Catalyst, should be
consolidated to improve efficiency. Together these segments support trading in government and
non-government bond instruments. The rules for trading are almost the same in all segments
(except for block trades rules). They all operate in the continuous trading system. The Treasury
BondSpot Poland (TBSP) is the other platform dedicated to trading of Treasury bills and bonds.33
As both platforms belong to the entities from the same capital group, a redesign in two venues,
one exclusive for primary dealers and another for all the financial institutions, would reduce
fragmentation and simplify investors’ operations.34 Aiming to strengthen the transparency,
primary dealers could play a role in improving pre-trade price dissemination and liquidity through
a minimum “hit and trade” quotes.

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32 Art 21 of MiFIR and Art 64 of MiFID II (implemented by Art 131g of the Act on Trading in Financial Instruments)
already provide an obligation for investment firms to publish details of each OTC transaction concluded on own or
clients account on financial instruments (e.g. sovereign bonds) traded on Trading Venue (RM, MTF). It is more than
max/min/average price. Therefore, a consolidated information could be released to market participants daily basis.
33 Which is an integral part of the Primary Dealers System organized by the Ministry of Finance
34 The use of two different venues, one exclusive for primary dealers (B2B) and other for all the financial institutions
B2C), aims to maintain the standard procedure in Europe
The creation of an exchange traded fund (ETF) tracking an index based on domestic government bonds to compete with investment funds may strengthen demand for government securities and attract new fund managers. The trading characteristics makes ETF attractive for different segments of investors, mainly active professional and individual traders who want to use the instrument for speculation or arbitrages. So, the fund manager can have interest to reduce the management fee in order to stimulate the trading volume. Besides that, the visibility and transparency may facilitate and make cheaper the distribution of this instrument. The potential liquidity of the ETF can enhance the competition with existent investment funds and accelerate the process of overall fees reduction. At present, there is a lack of effective competition due to the dominant role of banks in the distribution channels of investment funds. This instrument would also allow MoF to stimulate less liquid and off-the-run bonds, strengthening price formation along the yield curve.

Non-government Bond Market

A well-developed local currency non-government bond market supports financial stability and growth, complements bank financing for firms, enhances the pool of investable assets for different investor segments and supports long-term horizon investments in strategic areas such as infrastructure and housing.

A. Current Arrangements

Poland’s domestic non-government bond market is still small but has grown consistently in the last five years. The volume of domestic corporate bonds outstanding grew 87 percent since 2012, from PLN32.3bn to PLN70.7bn as of December 2017. Equally, the stock of the promising covered bond market increased 190 percent, from PLN3.1bn to PLN9bn in the same period (Figures 13 and 14), yet only still representing between 4% and 5% of the overall funding of the outstanding mortgage stock. While the growth of the non-government bond market is promising, corporate and covered bonds represent only 4 percent of GDP, which shows the incipient stage of non-government bond market development. Limited investor literacy, bank loan competition, intragroup cross-border financing and external market access (both for large issuers), asset tax and regulatory frameworks are also adversely affecting the growth and diversity of non-government bond instruments. Banks have also participated in this market, issuing long-term bank debt securities. The stock of these securities grew 183.7 percent since 2012, from PLN17.2bn to PLN48.8bn at the end of 2017.

35 There are already indices available in the market (e.g. Citigroup Poland Government Index, Treasury BondSpot Poland Index). However, they not necessarily meet investors’ expectations and MoF strategy. Therefore, the first step would be to analyze investors’ and MoF interests before defining the best composition and regulation of the index (tenors, benchmark size, etc) to be used as the ETF benchmark.

36 The term “corporate bonds” is in accordance with the ESA 2010 classification, which defines non-financial corporations as institutional units which are independent legal entities and market producers, and whose principal activity is the production of goods and non-financial services.
40. Bank loans are still the preferred, and sometimes the only, funding option for companies. Corporate bond issuance tends to be more accessible to larger companies as they are normally better prepared to fulfill regulatory obligations (e.g. listing, level of disclosure); and usually have greater capacity to reach higher rating levels, issue larger volumes and attract greater investor demand. However, bank loans are still the preferred option due to a variety of reasons, including the higher simplicity of bank loans (easier and faster); and the lack of a deep and diversified investor base for bonds with longer maturities. At the end of 2017, bank loans to corporates amounted to PLN353bn, 48.5 percent of them granted for 5 years or more (Figure 15).

41. The framework for primary market corporate debt issuance is based on public and private placements. Public offerings are utilized by large and more sophisticated issuers. They entail more intense requirements, greater formalization and charge higher costs (legal, distribution, etc.) The regular public offering regime is considered more complex and time consuming, reducing the potential supply of corporate bond issuances. However, the all-in cost may be cheaper as the issuer can access an expanded investor base. Medium and small entities have a preference for private placement. Private placements are not supervised by the KNF, have low requirements (no prospectus, no rating, etc.) and help issuers speed up the placement. Issuers have a preference for
private placements as they can access up to 149 investors in the primary market but immediately after that, bonds can be freely distributed to unlimited investors in the secondary market.\(^{37}\)

42. **The secondary market of non-government bonds is still incipient.** Bonds can be traded in the OTC market or in the bond market trading platform Catalyst. The volume transacted in the OTC market represents about two third of the total non-government bonds traded in Poland and few large companies dominate the majority of trading. Approximately one third of the volume is traded in one of the four Catalyst platforms. The volume of trade in Catalyst comprised PLN1.5bn on the electronic order book and PLN0.4bn in block trades in 2017 (Figure 16). This volume represents only 2 percent of the outstanding stock. Non-government bonds are inherently less liquid than government debt globally. These instruments have been bought predominantly by buy-and-hold investors in Poland which explain the observed lack of liquidity of non-government bonds.

![Figure 16](image)

43. **The growth of non-government bond markets depends on the further capacity to mobilize foreign investors,** in addition to expanding domestic investment and pension funds. This is not a new situation, as foreign investors at the end of 2017 held around 33.0 percent and 39.6 percent of two largest asset classes in the Polish capital market (domestic government bonds and equity)\(^{38}\), but this is exacerbating the need to improve the overall framework for a healthy development of the non-government bond market.

44. **Banks are net issuers rather than net investors in corporate bond markets.** As investors, banks purchase government bonds (waived from the asset tax). As issuers, they plan to issue more covered bonds - from about PLN 10 to 50 billion through specialized mortgage bank subsidiaries to refinance a larger proportion of local currency mortgage loans\(^{39}\), but the further issuance of covered bonds by specialized banks is crippled by the bank asset tax, as their accrued portfolio is reaching the PLN 4 billion limit that they can deduct. Banks also face Minimum

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\(^{37}\) Bonds issued by companies in private placements must fulfill law requirements to be quoted in the ASO system (Alternative Trading System)

\(^{38}\) Source: NBP estimates

\(^{39}\) Assuming a 20 percent refinancing (current stock of PLN254bn of PLN mortgage loans), compared to 4 percent refinancing now.
Requirements for Eligible Liabilities (MREL), which correspond to bank subordinated debt issuance of estimated about PLN 60 to 80 billion until 2023. In addition, non-financial institutions express interest to make a more active use of bonds to diversify their funding. And a new class of project bonds is set to emerge.

**B. Pending Issues and Recommendations**

45. The growth of the non-government bond market remains modest mainly due to the structure of the market. Some issues should be reviewed to improve this market:

- The delay to obtain approval of the documents for initial public offerings of corporate bonds takes in average from 2 to 3 months, but sometimes extends to 6 to 12 months. This situation is exposing issuers to excessive market risk. Authorities could improve the current issuance framework, expediting the approval process of public offers. This initiative has a profound impact in facilitating public issuance of non-government bonds.

- The market is dominated by 3-month WIBOR floating-rate bonds, which minimizes the market risk for investors and, consequently, the premium tends to be lower for the issuer at least in the beginning although increasing the uncertainties about the final cost.

- Some improvements could be considered, to make the process of authorization of public offers more efficient. The length of the processes is a result of many factors, including the “quality” of the initial applications received by KNF, the number of staff assigned to this function and the framework imposed by the Code of Administrative Procedures. However, it believes that there is room for improvement. In this regard, the KNF could implement a series of recommendations aimed at aligning incentives and improve the quality of documents received from the start that could lead to more expedite procedures. The KNF could also consider publishing guidelines and/or lists of “common” mistakes, highlighting the need for their correction and the potential for rejection of an authorization if not promptly addressed.\(^{40}\)

- Some clarifications have already been made regarding the use of the 149 persons exemption in private placements and more robust regulatory framework has already been proposed (for example, limiting the exemption when there are multiple issuances by the same company within short period of time). In addition, the KNF could consider the implementation of a notification requirement similar to that implemented by other jurisdictions,\(^{41}\) not to regulate or authorize exempt offers but to put the KNF in a position that allows it to monitor whether the exemptions are used in a manner that is consistent with the law and regulations. Other regulatory reforms like a lock-in period of holding

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\(^{40}\) See Poland FSAP “Technical Note: Supervisory Review on Capital Markets” – August 2018

\(^{41}\) A notification requirement exists, for example, in Canada. In the context of Poland, the KNF could analyze whether (i) there is a need to impose it on both the issuers and the intermediaries that participate in the placements, and whether (ii) it should be imposed for all or just some of the exemptions.
bonds for qualified investors participating in a private placement could be studied. In any event, the proposed reforms would need to be consistent with the European Directives and Regulations.

- **The mandatory dematerialization and registration in a CSD**, with ISIN codes, would contribute to increase the transparency and could expand the number of investors and liquidity in the secondary market. **Regarding the number of issuers, the domestic market is also mainly used by medium and small entities**, with issuances too small to foster a deep secondary market. Adverse selection may be at play, given the reported high default ratios in smaller issuances.

- **Although the asset tax directly affects banks and insurance companies, the cost is distributed to other segments of investors with impact on their investment strategy.** This situation is also creating market distortion against the development of corporate bond markets, as banks as sizeable investors can only waive government securities; yet they compare yields of various instruments on a net of tax base. A preferred scenario is the overall reform of this asset base tax. A second-best scenario would see the existing waiver extended to both government and corporate bond markets, for both banks and insurance companies. A third-best approach consists in waiving the covered assets from the calculation base of mortgage banks and to waive covered bonds like Treasuries for the banks and insurance companies investing into covered bonds.

- **Only high rated non-government bonds are currently eligible as collateral in repo operations with NBP.** Collateral eligibility with appropriated haircuts could add an element of liquidity and increase the demand for these bonds. Currently, they need to restrain their allocations in this asset because of this limitation. This market could attract a broader pool of investors if a minimum acceptable liquidity could be achieved.

- **The quality of information needs to be improved.** In private placements, issuers only provide limited initial and updated information, which poses a challenge to expanding the investor base. The partial information about the secondary market is also a constraint as only Catalyst releases regular trading reports about transactions, but there is no information provided on OTC trading.

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42 As highlighted by KNF staff, such a provision should not block/eliminate the right to provide services of stand-by underwriting agreements and firm commitment underwriting agreements when they are performed in line with the rules dedicated to those services.

43 See Poland FSAP “Technical Note: Supervisory Review on Capital Markets” – August 2018

44 This type of investment may increase bank interconnectedness (although life insurance and pension funds also have investments in such long-term bonds, which helps to diversify the broader financial system) but not so much on the related risk side, as covered bonds are built as very secured bonds (next to government securities, in case of the issuing bank defaults, bondholders have direct access to low-risk and over-collateralized assets). Covered bonds are rated several notches above bank counterpart risk. International best practice recognizes covered bonds as low risk assets (10% risk weighting), as eligible collateral to central bank repo markets, and the ECB has been managing a sizable open purchase program of all EU covered bonds.

45 Although the current surplus liquidity makes useless this measure, in scenarios of tight liquidity, it is relevant and can make the non-government bonds more attractive. So, NBP could take advantage of the favorable scenario to implement this measure.
46. **Measures should be pursued to bolster the promising development of covered bonds.** This instrument is recognized by investors as a higher-quality asset class of non-sovereign bonds. As mentioned, three mortgage banks licensed as subsidiaries issued about 4.2 percent of the outstanding stock of PLN mortgage loans. Covered bonds could in the long run finance up to 20 percent of the stock. However, the asset tax is crippling this development, given the PLN4bn deduction threshold soon to be reached, the limited margins of mortgage lenders on quite competitive retail banking markets, and disincentives for banks and insurance companies to hold such assets on a net of tax yield base. The removal of the asset tax at least from covered bonds as acquired assets, and of the cover assets from mortgage banks from their asset base, would improve the development of covered bond markets.

47. **Project bonds as a source of infrastructure finance matter but need to be redesigned.** As EU funds for infrastructure gradually phase out, the government should build institutional capacity for structuring infrastructure projects financed via capital markets. A careful understanding of the risk absorption capacity of stakeholders (sponsors, banks, investors, multilaterals, users and government) should allow assigning risks factors to parties that can best manage them. The WSE is proposing the issuance of project bonds to finance projects to connect rivers and channels. A concession would be granted to a private company that issues project bonds supported by three sources of financing: (a) users’ fees; (b) contingent government support on an annual basis, in case users’ fees are insufficient for servicing the debt; and (c) treating bonds as eligible collateral by the NBP. Even if this latter measure does not translate as a direct funding source, it is de facto exposing the NBP, and should not be pursued, as (i) the NBP has no comparative advantage in assessing project risks, (ii) this intervention would create moral hazard behaviors, and (iii) banks would artificially replace pension funds as long-term investors.

48. **WSE Group and authorities could assess mechanisms to stimulate secondary market liquidity of non-government bonds.** Lack of liquidity in the secondary market may be limiting the demand for these instruments, especially for longer tenors. Even though it is rare to observe high levels of liquidity for non-government bonds in different markets around the world, the objective would be to put in place mechanisms that could bring greater comfort to investors. As a potential solution to improve the liquidity, market makers could introduce an organized call market on a regular basis.

**Derivatives**

49. **Derivative markets, especially FX and interest rate derivatives, provide tools for risk sharing and management, facilitating the development of long-term financing in local currency.** Derivatives allow an efficient transfer and hedging of risks across investors with different profiles and capacities to absorb such risks. Derivatives markets also strengthen the

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46 Call markets is a mechanism where trades are conducted at pre-agreed discrete points in time. It is a more effective alternative to stimulate trading activity and price discovery. This model complements the market making mechanism based on quoting obligations that are harder to implement with less liquid instruments. Call markets have been the most effective mechanism to generate liquidity for corporate bonds and off-the-run government bonds in Brazil.
banking sector’s ability to provide term financing in local currency by improving the sector’s capacity to manage market and liquidity risks caused by bank’s maturity transformation. This is especially important to diversify the hedging instruments where financial intermediation through banks is the dominant form of financing, as in the case of Poland.

A. Current Arrangements

50. The future contracts of interest rate are still in their infancy. This market did not develop as quickly as did cash instruments. Exchange-traded interest rate derivatives still have some room to expand in volume and in the breadth of maturities offered, and in the types of modalities. The current WIBOR 1-, 3- and 6-month future contracts, as well as future contracts for short-, medium- and long-term Treasury bonds, which are traded on the WSE, are insufficiently liquid and the derivatives market is effectively based on very liquid interest rate swaps (IRS) and forward rate agreements (FRA). According to market participants, IRS transactions between banks as well as banks and large players usually use CCP to mitigate counterparty credit risk (the majority of PLN-denominated interest rate derivatives have to be centrally cleared due to the clearing obligation introduced by the EU law), but this is not yet the case with respect to transactions between banks and non-financial medium and small entities, where both parts can be exposed to counterparty credit risk. It is worth mentioning that the scope of the clearing obligations is gradually widened. At the moment, it applies to large financial institutions (encompassing virtually all interbank transactions and the vast majority of turnover in general) and starting from June 2019, it will also apply to Category 3 entities – i.e. remaining, smaller, financial counterparties. Moreover, notwithstanding the aforementioned clearing obligation credit risk in bilaterally cleared transactions is mitigated by the mandatory exchange of collateral (in accordance with EU law provisions and ISDA recommendations). Currently all counterparties in the scope of EMIR are obliged to provide variation margins covering risk associated with valuation of their derivatives transactions. Larger entities are additionally required to exchange initial margins (the scope of the initial margin requirement is also gradually increased to encompass all entities falling under EMIR).

B. Pending Issues and Recommendations

51. The IRS market is liquid but can be costly and not accessible for all market participants. Some issues still hinder the use of IRS:

- **Credit risk**: if the non-financial institution (NFI) has a high credit risk, either the IRS cost is high, or the counterparty requires more collateral. In some cases, the counterparty requests both a higher premium on the IRS and additional collateral, making the all-in cost of the instrument unviable for many NFIs.
• In bilateral agreements without a CCP, banks request the deposit of collateral based on their own model and NFIs need to accept it. Although this aspect is predefined in the bilateral agreement, in turbulent moments, the volume of collateral requested can be unsustainable and unwinding the transaction may be too expensive. Therefore, NFIs may be in trouble because a default can break financial covenants and accelerate not only this but also other financial operations, taking them towards insolvency.

52. Future contracts of overnight interest rate could complement the hedging tools available as they are a standardized instrument traded in the exchange and guaranteed by CCP. Therefore, future contract can be offset partially or totally with one or several players. The exchange can offer futures contracts of overnight rate with different maturity dates, which make it easier for market participants to hedge their positions as well as invest in longer tenors.

53. The development of future contract of interest rate requires an integrated agenda involving several market segments and institutions. Assessment actions among NBP, MoF and WSE in close engagement with market participants are needed to enhance the success in building a future contract of overnight interest rate. The agenda would include actions to (i) keep the liquidity of the underlying reference rate; (ii) maintain the availability of sizeable and liquid instruments (e.g. government bonds); (iii) increase the range of investors that are allowed to participate in the market (e.g. permit pension funds to hedge their portfolio);47 (iv) evaluate the alternative to issue government bonds maturing at dates coinciding to the maturity dates of futures contracts (this strategy was implemented in Brazil with significant success).48 The future contract of overnight interest rate could be an instrument to provide a hedge against interest rate risk not only for fixed rate government but also for corporate bonds.49

III. INVESTOR BASE

A. Current Arrangements

54. Institutional investors are relevant actors in Poland’s financial market. As of December 2017, they manage assets for PLN 681 billion, of which insurance companies,

47 They don’t have significant portfolio vulnerable to interest rate because corporate bonds are predominantly issued in floating rates. With future contracts of interest rate, the costs could be lower permitting them to allocate resources in fixed rate and hedge these assets with future contracts OR issuers to launch bonds in floating rate and hedge them.

48 The Brazilian future interest rate contract based on the overnight interbank rate was introduced by the Brazilian Mercantile and Futures Exchange (BM&F) in 1985. It soon became liquid but supporting issuance policy of government securities implemented by the government in 2003, matching maturity dates of government securities with those of derivative contracts boosted the market, consolidating the future interest rate contract as the most liquid reference in the market. The product generates the highest revenue for the stock exchange.

49 The interest rate of the contract fluctuates according to the market expectations. The long-term stability and lack of expectations to change the NBP rates tend to reduce the market liquidity of short-term instruments, however this market complements the existent swap instruments as the access of market participants to deal with future contracts is easier and more accessible, and they can be offset partially or totally with one or several players.
Investment funds and open pension funds (OFE) manage PLN 199 billion, PLN 303 billion and PLN 180 billion respectively (Figure 17). The value of these assets is equivalent to 38 percent of the total assets of the banking sector, or 34 percent of the GDP. Foreign investors are also significant investors in the domestic equity market.

![Assets of Institutional Investors](image)

**Figure 17**

Assets of Institutional Investors

(PLN billion)

Source: UKNF, NBP

**Cross linkages**

55. **Institutional investors in Poland are characterized by cross linkages with the banking sector.** Insurance companies, investment funds and open pension funds have business relationships with banks, and in some cases banks of the same capital groups. In the case of investments of insurance companies, approximately 13 percent of the assets were invested in the banking sector. Most significantly this is the case for open pension funds, where 37 percent of the asset portfolio is invested in banking sector assets, of which approximately 70 percent are investments in banks’ equities.

56. **Except for investments in Treasury instruments and bank securities, the exposure of institutional investors to fixed income securities is modest.** Contrary to other markets were institutional investors compete with banks in the financing of the real sector, institutional investors in Poland invest through the banking channel. While the relatively high allocation of pension funds to the financial sector might be a consequence of the needs of financing by banks groups, in the aftermath of the crisis, it is worth exploring whether there are issues of competition between banking and non-banking institutions that further inhibit more direct competition with banks. From

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50 As approximately half of the assets of the insurance companies are invested in investment funds units, some double accounting might exist.
the perspective of capital market development, it would be desirable for non-banks to compete with banking institutions in the corporate sector. While in most of the cases, investments in banking shares are not related to the same financial group, it is not evident the lack of interest of the pension fund asset managers for competing in markets where banks also serve

Open pension funds

57. **Open pension funds are subject to limited diversification.** Although under certain conditions an equity exposure of 86 percent of the portfolio of open pension funds might be a reasonable investment strategy (Figure 18), global diversification of the portfolio is essential in order to reach the efficient frontier. In the case of the OFE, only 6.4 percent of the portfolio are investments in international equity. In other words, investment risk is highly concentrated in the domestic market. Open pension funds have approximately 20 percent of the market cap and 38 percent of the free float of main shares of the domestic equity market (WIG). Any idiosyncratic shock may affect drastically the value of the pension funds. As OFE pension funds are the main investors in the equity market, in normal conditions it would be desirable to promote—through regulations—further diversification of the OFE portfolios.

![Figure 18 Asset portfolio of Open Pension Funds, December 2017 (as % of assets)](image)

Source: UKNF

58. **The government is considering further reforms on the OFE scheme.** The intention of the government, in a second wave of pension reforms, is to transfer one fourth of the OFE portfolio (approximately USD10bn) to the Demographic Fund, and transfer the rest to voluntary pension schemes, to be managed by asset management companies. The amount of transfer is calibrated to ensure that pension funds are not forced to sell domestic equities. While avoiding fire sales of assets is a reasonable approach, it would be useful to ensure further diversification of the pension portfolios. This diversification would necessarily imply further investments abroad. In the past few months, Poland’s securities market has seen strong demand from international investors. Substitution of domestic by international equities in the presence of a strong demand would be useful to avoid drastic changes in equity prices at the time of enacting diversification regulations.
59. **The introduction of a voluntary pension scheme with automatic enrollment features (PPK) is expected to create additional demand for domestic securities and increase the appetite of foreign investors for domestic assets.** The presence of domestic institutional investors is a contributing factor to the international demand for domestic securities, as foreign investors are interested in having other strong players with different risk profiles, such as domestic pension funds that can be potential buyers in case they decide to sell their positions. This feature is very relevant in episodes of financial stress, where the stakes of international investors in domestic economies are small compared to their global portfolio, but they are big for the size of the domestic markets.

60. **The creation of the PPK program becomes more pressing if the second wave of pension reform does not take place.** According to the legislation, ten years before retirement the funds accumulated in the pension plans are required to be gradually transferred to the Social Security System (ZUS), according to the safety slider mechanism. Since in practice the OFE scheme is not receiving significant new contributors since 2014 and the slider safety is increasing, the value of contributions will gradually move into a steady fall in value of the OFE assets. The creation of the PPK scheme will offset this trend and compensate for additional domestic demand.

**Insurance companies**

61. **Life insurance sector has had a slow growth during this decade.** As of December 2017, life insurance companies in Poland manage assets of approximately PLN 104 billion. Investments in shares of investment funds comprised a significant part of the sector’s assets, including unit-linked assets.

62. **Insurance companies have large exposures to fixed income instruments, in particular to government instruments.** Approximately half of their portfolio is directly or indirectly invested in government securities (Figure 19). Many of these exposures are indirect: PLN 56 billion are invested in unit linked products, of which 79 percent are invested in shares of investment funds. Except for investments associated with unit-linked insurance investments, domestic life insurance companies do not make investments in corporate shares of companies listed in the regulated markets.
Portfolio of Insurance Companies, December 2017* (as % Assets)

* Structure of investments taking into account components of investment funds’ assets
Source: UKNF

63. Unit linked products transfer the risk of the asset to the policyholders, but since the asset is in the balance sheet of the insurance company, policyholder’s risk is also the default risk of the life insurance company. For purposes of consumer protection, it would be useful to ensure that these issues are clearly advertised.

**Investment Funds**

64. Investment funds have doubled the amount of assets under management since 2012, and currently are the largest institutional investor in the country. Investment funds are divided in open-ended and closed ended funds. As of December 2017, the share of investment funds in the capitalization of domestic companies listed on the WSE Main List and New Connect was 5.6 percent and 15.1 percent respectively.

65. Households are significant contributors to investment funds. While other institutional investors hold approximately one fourth of the assets of open-ended funds, households are still the largest participants in investment funds. In other words, this is not simply recycled money from institutional investors, but direct resources from individuals.

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51 In open-ended funds, inflows are converted into investment fund units (shares), and in closed ended funds in investment certificates, expressing the proportional share of their holders in the fund assets. While shares are redeemable, investment certificates – as a rule of thumb – are not until the end of the life of the fund. The market also offers some specialized open-ended investment funds.
66. **Portfolios of investment funds are domestically well diversified.** As shown in Figure 20, approximately 30 percent of the portfolios of investment funds are invested into equites, including non-listed instruments. Due to the nature of their investments, closed ended funds have more investments in equities of non-listed companies. Similar to the case of other institutional investors, investments in the banking sector are significant in the portfolio of investment funds.

![Portfolio of Investment Funds, December 2017](source: NBP)

B. Pending Issues and Recommendations

67. **Domestic institutional investors are essential for attracting a solid base of foreign institutional investors.** Poland has the advantage of receiving inflows from foreign investors, especially those from the European Union and OECD countries. The active participation of domestic institutional investors is essential for attracting quality foreign investors, especially life insurance companies and defined benefit pension funds, who invest strategically in certain assets and are willing to keep the assets in period of volatility. Domestic institutional investors add security to international investors in terms of the possibility of selling the assets in case it becomes necessary. Consequently, preserving the current institutional investor base and expanding it, for example through PPK, can make a significant contribution for attracting investments from abroad.

68. **The instruction of PPK is a positive development for the domestic capital market.** PPK has not only the possibility of mitigating the risks on equity prices of the potential impact of the dismantling of OFE, but also of creating pension portfolios that are more aligned with the long-
term interest of the individuals. The introduction of portfolio benchmarks for the pension funds will be essential for adding dynamism to investments along the lifecycle of individuals.

69. **The domestic investor base for government securities might not be strong enough, especially for long tenors.** While investment funds and insurance companies have solid investments in Treasury instruments, pension funds (OFE) have no exposure. To the extent that the new PPK voluntary pension system will be based on lifecycle portfolios, it is not evident that they will demand significant amount of government securities, especially considering that will focused in younger population that should have greater equity component in their PPK portfolios.52

70. **One challenge will be to engage institutional investors in the financing of infrastructure.** Currently the exposure of institutional investors is minimal, and it is important to build capacity, as the funds from the European Union begin to phase out. The PFR can play an important role designing investment vehicles that can potentially attract resources from institutional investors. While historically the banking industry have participated actively in the financing of infrastructure, with the introduction of Basel III, it is not obvious that they will maintain the same appetite. PFR may want to create a working group with private sector investors to understand their constraints and appetite for infrastructure asset class, and design investment vehicles with risk sharing arrangements that can attract domestic institutional investors.

71. **Cross linkages between banks and non-banks need more careful examination.** The fact that institutional investors contribute little to the financing of the corporate sector, but strongly to the financing of banks needs to be further analyzed. It would be useful to examine the governance standards related to financial groups to ensure independence of the decisions and promote a sound competition between banks and non-banks in the financing of companies of the corporate sector.

52 From a technical perspective, PPK investment strategies, based on lifecycle portfolios that optimize total pensions after retirement age, are likely to have high exposure to equity, because most of the fixed income component that individuals need would be offered through the first pillar (NDC).
IV. Assessment of the Proposal for Employee Capital Plan (PPK)\(^5^3\)

A. Introduction\(^5^4\)

72. This chapter analyzes the proposal for the creation of a voluntary funded scheme in Poland. The introduction of a voluntary funded pension scheme with automatic enrollment features (Employee Capital Plan, PPK) is assessed as a positive initiative for Poland. The PPK program will help to increase national savings and offset the declining replacement rates for pensioners receiving benefits from the social security system. The PPK program is estimated to manage annual flows for about PLN 15 billion starting 2020. In addition, as contributors to the OFE scheme (second pillar) start to disinvest from domestic equities, the PPK program may help to support the domestic investor base and play a vital role in the development of capital markets.

73. While PPK is a timely and necessary reform for improving the life of future retirees, this chapter suggests various areas where it is possible to make improvements. The main risks are in the operational risks associated to short timeframe for implementing the scheme and the relatively inefficient proposed scheme for the payout phase. This note offers an alternative proposal for the design of the industrial organization of the PPK.

\(^5^3\) After completing this note the proposal was turned into a Law and signed by the President on November 19, 2018.

\(^5^4\) References


74. **Automatic enrollment schemes are one of the most celebrated features of research and implementation of voluntary funded schemes.** There is relevant international experience of countries introducing automatic enrollment schemes in their voluntary pension schemes, including the United States, the United Kingdom, New Zealand, Italy and most recently Turkey. In the case of the United Kingdom, the introduction of the automatic enrollment scheme has increased levels of participation of employees above 85 percent, which is higher than the government expectations. However, not all cases show great level of participation, and therefore it is important to be careful in the details. Less successful cases include Italy and Turkey.

75. **The introduction of PPK is timely, not only from the economic cycle perspective, but also from the future evolution of the pensions from the Notional Defined Contribution (NDC) scheme (first pillar).** In a scenario of economic growth and low unemployment, the resistance of social partners should be low. The contribution rates of PPK are also aligned with international experience. The still favorable economic conditions also support the proposed contribution rates. In addition, PPK pension benefits will help to bring replacement rates closer to 40 percent of the average salary, which is the minimum that countries try to achieve.

76. **This chapter is structured as follows:** The next section B explains the main features of the PPK. Section C addresses the main features associated with the tight calendar for the implementation of the PPK plan, including the need of enacting regulation. Licensing fund management companies and preparing communication and educational campaigns. Section D includes various suggestions for improving the performance of the PPK.

**B. Main features of the pension schemes**

77. **According to the PPK proposal, employers are required to enroll in the PPK eligible employees with a basic contribution rate of 1.5 percent of their wages (which can be increased by 2.5 percent).** While employees can decide to opt-out from the system, they are automatically enrolled with a contribution rate of 2 percent of their wages. Employees may also increase their contribution rate to a maximum of two percentage points. The state, with the funding of the Labor Fund, will provide a welcome package of PLN 250 to each participant an annual contribution of PLN 240. The annual contribution of the state can be changed by regulation.

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56 For an evaluation of the automatic enrollment schemes implemented in various countries see Rudolph (2016).
57 According to government estimates, the welcoming bonus would cost PLN 1.1 billion the first two years of operation and PLN 2.1 billion annually. These resources are expected to come from the Labor Fund, which disposes of sufficient reserves. While the surpluses run by the fund over the past years may not repeat in the future, the government by simple regulation can change its contribution, if considers necessary. The fiscal cost appears limited.
78. Working on a tight calendar, the government expects to approve the PPK law by September 2018, for the system to start operations in July 2019, and according to the calendar set below.

<table>
<thead>
<tr>
<th>Number of Employees</th>
<th>Due date for enrolling employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>250+</td>
<td>July, 2019</td>
</tr>
<tr>
<td>50-249</td>
<td>January, 2020</td>
</tr>
<tr>
<td>20-49</td>
<td>July, 2020</td>
</tr>
<tr>
<td>Others (including public sector)</td>
<td>January, 2021</td>
</tr>
</tbody>
</table>

79. Companies are required to reach an agreement with a fund management company and employees will be allocated into lifecycle strategies. In case that they fail to do it, the Polish Development Fund will serve as the default option. Fund management companies will be allowed to charge a management fee of a maximum of 0.5 percent of the fund’s net assets, in addition to a success fee of a maximum of 0.1 percent of the fund’s net assets. Investments will be guided through a common benchmark portfolio. At age 60, contributors will be allowed to withdraw 25 percent of the savings and the rest will be paid in 120 monthly installments. Finally, with the exception for the 30 percent of the asset under management limit for investments abroad, the bill that the mission had access did not include explicit investment regulations.

C. Challenges associated to the tight timeframe

80. While PPK is a positive initiative and with possibilities of improving the pensions of a significant group of employees after retirement, the tight calendar for implementation of the PPK imposes risks for the successful implementation. This section highlights these areas and proposes some initiatives for mitigating these risks. A successful implementation of the PPK should take into consideration (1) adequate time for a proper communication and educational campaigns directed both to employers and employees; (2) adequate time for the elaboration of regulation, licensing, and time for the fund managers to prepare their program for the contributors; (3) preparation of investment strategies; and (4) development of the IT platforms.

Communication and educational campaigns

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58 In the period that followed the mission, the government decided to include insurance companies as eligible institutions for the provision of voluntary pension funds.
59 The team evaluates positively the fact that investment limits are not included in the Law. The enacted law included other investment regulations.
81. Nine months for implementation is a rather short time frame for the multiple tasks that need to be performed. While automatic enrollment pension schemes are largely driven by behavioral factors (people are contributing to the system by default), in order to gain credibility among the population it is essential to inform employees about the options, and to communicate employers about the fact that they need to comply with the law. Although at the time of the mission was still unclear who will lead these communication and educational campaigns, the government is expecting to rely on the private sector. In this case, the communication and educational campaigns are likely to turn into a marketing competition among fund managers, with relatively small component of information. While the advertisement in short term may create a positive attitude among contributors, in the medium term, the sentiment might be rather negative if not supported by information about the need of participating in the funded scheme.

82. With the relatively recent experience associated to the dismantling of the second pillar pension system in Poland, which involved criticism to funded pension fund management companies, it is essential to provide a message that brings credibility into the new system. While one of the main criticisms from the previous administrations to the funded pension scheme was the high marketing costs, which resulted into a ban on canvassing of pension fund management services, it seems questionable that the current proposal allows the use of direct marketing as a way of engaging companies and employees.

83. Successful cases, such as the one in the United Kingdom and New Zealand, communication and educational campaigns have relied on unified messages run either by the government or independent agencies. In the case of the United Kingdom, Nest run the campaign “we are all in” for employees and the government run the campaign “it is Law, and you have to comply with it” directed to the employers were successful in bringing the main messages to the participants. The communication and educational campaigns in the case of the United Kingdom, were carefully crafted, including the elaboration of a dictionary to attract the different groups of the population. Running a more decentralized campaign has different effect in terms of the perception of individuals towards the new pension system. In the case of New Zealand, the communication and educational campaigns were run by an independent entity.

Elaboration of regulation and selection of pension fund managers

84. Sufficient time for the elaboration of secondary regulations is essential for the proper implementation of the new voluntary pension system. Fund managers and companies need to know the regulations that apply to them to offer the products to contributors. As discussed below, the investment regulation is an area that may need further definitions. For the case of Italy, Rinaldi (2010) highlights that the short time for elaborating the regulations was a contributing factor to the low level of participation of contributors to the Italian voluntary pension scheme.

85. Fund managers would need time to test their system and contact potential clients. In addition of the time for enacting these regulations, companies that receive licenses would need to prepare their strategies, in compliance with the regulation, to be able to offer their products to market participants.

Investment strategies
86. Ensuring that investment default options are welfare improving is essential for achieving adequate replacement rates in the future. An important and significant innovation is the creation of common portfolio benchmarks for the pension fund industry, and the fact that these benchmarks need to be aligned with lifecycle strategies.

87. The introduction of lifecycle strategies helps to solve some of the problems of traditional lifestyle pension schemes. Lifestyle schemes, characterized by maintaining the same portfolio composition at all times, are inadequate for pension fund contributors, as the average contributor does not have enough literacy to move from equity intensive portfolios to fixed income portfolios along his or her working life. Individuals tend to stay with the same fund for long periods of time, which might be suboptimal from the perspective of risks and asset accumulation. Lifecycle strategies are the most reasonable way of optimizing the portfolio of individuals in the long term, as they allow younger investors to have a higher equity component at young ages and automatically migrate towards strategies with more (long-term) fixed income as individuals approach retirement age. Since lifecycle portfolios should be designed to reach certain objective (asset accumulation, or expected annuity), not any lifecycle portfolio would be optimal.  

88. A benchmark portfolio needs to ensure that investment strategies are aligned with the long-term objectives of the pension system. The introduction of a common portfolio benchmark is an important innovation in the PPK system as it changes the focus of attention from short to long-term optimization and focus the allocation in the objectives of the pension system, rather than rates of return. However, since PPK is part of the retirement income of individuals, the portfolio benchmark needs to take into consideration the other sources of retirement income of individual, including first and second pillar.

![Figure 21. Expected Replacement Rates](image)


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60 See Campbell and Viceira. (2002).
89. **Portfolio benchmarks need to be calibrated to include other sources of retirement income.** As shown in Figure 21, by 2050 total replacement rates from the Social Security System in Poland will be approximately 31 and 22 percent of the average salary, for males and females respectively, according to world Bank estimates.\(^{61}\) While these figures are relatively low, they are not subject to market risk, and consequently are a source of fixed income for individuals. Lifecycle strategies in the PPK should calibrate the level of replacement rate needed, for example 10 percent for 25 years of contribution, and to decide on the market risks levels needed for achieving those levels. Given that the retirement income from Social Security offers a significant percentage of fixed income, the portfolio of PPK is likely to have a higher weight for equities along the working life of individuals.

90. **The portfolio benchmark also needs to take into consideration the way in which the PPK benefits will be paid.** For example, a benchmark portfolio resulting in lump sum at retirement age, should be different to the portfolio resulting in fixed annuity payments.

91. **This note recommends the use of variable income annuities as a default option.** Considering that replacement rates offered by the Social Security System will be low (countries typically try to target at least 40 percent), and that life expectancy at retirement age will give individuals more than 20 years of life expectancy, offering inflation indexed fixed annuities might be a product too expensive for contributors, and consequently unable to provide reasonable replacement rates. Variable income annuities, where part of the income is invested in equities, offers the possibility of some pick up yield over the years, in exchange of some volatility in the value of the benefits. This is not about investing all the pension assets after retirement age in equities, but a part of it, which offers diversification and some better pensions in the medium term.\(^{62}\) Passing these decisions to individuals are likely to result in suboptimal outcomes.

92. **The definition of the portfolio benchmark is the logic consequence of a process of pension optimization.** Considering the low replacement rates that will be offered by the Social Security System, for contributors that pay 19.52 percent of their income into pensions, it is essential to create a private pension system able to optimize the future pensions coming from these savings. The alternative of not creating a benchmark portfolio and letting individuals to choose among the multiple alternatives would be a suboptimal strategy. Since individuals do not have enough financial literacy, they may end up investing in suboptimal portfolios resulting into low pensions in the future. Although fund managers would be “filtered” by employers, the financial literacy of the large majority of employers may not be sufficient either to make a proper portfolio selection for their employees. Even more, there is nothing in the regulation that may incentivize them to make a proper selection of asset managers. In the case of the United States, employers are liable for the selection of the fund managers, and they have to demonstrate a due process for the selection of 401(k) plan providers.

93. **Considering the presence of a benchmark portfolio, it is important to decide who defines the portfolio benchmark.** Governments are in a relatively weak position for defining the benchmark, since they can be blamed for any short-term volatility that may affect the value of the

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\(^{61}\) See World Bank (2017).

\(^{62}\) See Vittas, Rudolph and Pollner (2011)
pension funds at any point in time. Government involvement may also introduce a bias if the government for example wants a higher percentage of the funds invested in government debt, or if it decides to overweight certain investments, as a way of promoting specific areas of the economy.\textsuperscript{63} While the pension supervisor (KNF) is also an alternative, it would create a conflict of interest, as KNF would be simultaneously supervising the asset managers and measuring the performance of the pension system.

94. Letting the market to compete for the benchmark is likely to result in inefficient portfolios. Competing on the benchmark brings back the problem of inadequate financial literacy. Employers and employees would be unable to compare these products, and the final market shares will be a consequence of the marketing capacity of each of the agencies. The experience of Lithuania is illustrative in this regard, as pension fund management companies are allowed to offer different investment alternatives, which are difficult to compare, and where there are information asymmetries between contributors and fund managers. One scenario would be convergence to portfolios focused on short term fixed income, with low returns and low volatility.\textsuperscript{64}

95. A better alternative is to build consensus with the private sector, including the possibility of creating some form of “Commission of Wise Persons.” Since the problem of the portfolio selection is a problem of the lack of an informed demand, the solution needs to also come from the demand side, which may represent the views of an informed demand. Such a Commission may provide the main elements for a benchmark portfolio, and it has the advantage of private sector representation in the elaboration. In 2017, the Pension Reform Commission of Peru proposed a reform along these lines for the mandatory funded pension pillar. In addition, in 2011 the Lithuanian government was working on a similar concept, but these attempts were interrupted by the fiscal constraints of the financial crisis that downsized mandatory funded pension system. The benchmark should only be changed when structural conditions change. Individuals should be allowed to select portfolios different than the benchmark portfolio, but always in the context of lifecycle portfolios.

96. Benchmark definitions are needed, considering the low replacement rates that will be reached from the social security scheme. In the case of the 401(k) plans in the United States, these common benchmarks have not been considered as it imposes a paternalistic approach. Still, as mentioned above, employers in the United States need to justify their selection of fund managers, which will not be the case in Poland. These elements open room for more precise elaboration of the investment regulation of the pension fund system.

97. Performance of the funded pension system should be based on probability of achieving a replacement rate, rather than on rates of return. An important definition is how the Polish Financial Supervision Authority (KNF) would measure the performance of investments of the pension funds. In the presence of a benchmark portfolio, the focus of the supervision should be in ensuring that the risk of the portfolio of each pension fund is similar to the benchmark. This could be done, for example, through the imposition of a tracking error, or some sort of differentiation against the benchmark. As discussed below, the use of performance fees defeats the purpose of long term asset allocation (strategic asset allocation), and it is advisable to maintain

\textsuperscript{63}This risk might be considerable, since at least 70 percent of the portfolio needs to be invested in the domestic market.

\textsuperscript{64}The case of Brazil is extreme, as voluntary pension schemes are largely invested in overnight government securities.
only the asset management fee. While the purpose of strategic asset allocation is to create long term returns, aimed at optimization of the target, performance fees shift the focus towards the short-term.

98. **In the presence of home bias imposed by the law, the government should play a proactive role in the development of the capital market.** Since at least 70 percent of the portfolio needs to be invested in the local market, it is essential for the government to take a proactive decision in the promotion of asset classes that would help in further diversification, including housing and infrastructure. In the initial stages, these asset classes should be included in the benchmark portfolios, primarily through “credit” and later as asset classes by themselves. For example, the development of the covered bond market in Poland requires adjustments to the tax code, for this market to develop. Involvement of institutional investors in infrastructure financing requires a more medium-term strategy, involving other organizations. In addition, it is essential not to include in the main law additional investment restrictions, in order to ensure flexibility for investments in the future.

99. **The PFR can play an important role as a catalyzer for infrastructure financing.** Since Poland became part of the European Union, most of the large infrastructure projects have been financed with resources from the European Commission, including the Cohesion Fund. As these funds will start to phase out it is important to develop the capacity of the domestic financial sector to finance infrastructure projects. Since pension funds are portfolio managers, it is not their role to structure those projects. An institution like the PFR can be instrumental in structuring the financing of infrastructure projects and acting as a catalyzer for domestic institutional investors, including PPK investors to participate.

*IT Platforms*

100. **The design of IT systems is an important challenge for the implementation of the PPK.** According to the current design, the collection of contributions and record keeping will be carried through a parallel scheme, despite having in place a platform managed by the Social Security Agency (ZUS) that carries similar functions. The argument for this duplication is to bring confidence among participants that PPK only involves private savings, and consequently to mitigate the risk of nationalization or the perception that these funds could be transferred to the social security system. The work on the parallel platform has been led by PFR, which is also expected to play a central role in the settlement of accounts.

101. **Although providing comfort to people about the safety of their assets is important, there are more cost-effective ways of achieving that goal.** Creating a parallel structure of contributions increases the costs of the system and operational risks, given the short time frame for implementation. In addition, the proposed framework increases the burden of the employers to the extent that they will have to fill up different forms for paying contributions. The experience of the United Kingdom and New Zealand shows that employers assign significant value to the simplicity of the system. Thus, the creation of a parallel platform does not contribute to increasing simplicity or maintaining costs low. While some may argue that these issues are under control since fees are capped at 0.5 percent of the asset under management (AUM), and consequently the system is already “low cost,” the fact is that the design creates the incentives for fund managers to
charge the maximum fees. An alternative scheme, as discussed below, may create incentives for further fee reductions, which will benefit the future pensioners.

102. Although a detailed analysis of the degree of development of the IT platform used in the PPK scheme was not carried, a greater level of coordination with ZUS is recommended to fulfill some basic requirements. Within nine months after approval of the law, the IT platform would need to be implemented and tested, which is a short timeframe. The provision of a database with companies and employees has been the main requirement that ZUS has to deliver, but PFR will be required to perform supervisory functions, including ensuring that employers are complying with the law, that can be a challenge for an institution that is new in this field and has other mandates to operate. While PFR is considering the design of an IT platform as capable of providing all the supervisory needs, the authorities should not overestimate the enforcement capacity through online services. The international experience shows that some more specialized units on supervision might be needed. The PFR should consider involving ZUS in some of these tasks to ensure that employers are complying with the Law.

103. The government should allow sufficient time for testing the system before launching formally the PPK program. The government should allow flexibility in the launching of the PPK program, in case that the nine-month time period results insufficient for putting in place and testing the IT platforms that will support the PPK.

C. Considerations for Strengthening the PPK

104. Few other areas for improvement can make the system more functional to future retirees. First, the industrial organization of the fund management industry is based on the OFE model and replicates some of the problems that affected the second pillar in the past. Second, a more precise definition of the areas where the PFR may effectively add value is recommended. Third, the introduction of performance fees is not helping in defining the long-term asset allocation of the pension funds. Finally, since the PPK is part of the pension system it is essential a stronger payout phase, so individuals can effectively have better pensions and longevity risk protection.

Alternative industrial organization for the PPK

105. The proposed model of PPK does not offer the right incentives for long term investment performance. The proposed scheme is based on the industrial organization of the OFE model. Leaving aside the multiple benefits of funded pension schemes and the role of capitalization, the industrial organization of the OFE model has failed in maintaining the costs low and in creating efficient asset allocation. The hybrid nature of the pension fund management companies, which combine account management and portfolio management is at the root of the problem. While account management is a business with scale economies, portfolio management is not. Consequently, the structure of incentives for pension fund management companies is for gaining market share, which bring into concentration the number of market players, and investment policies that tend to converge to suboptimal pension strategies. In addition, since the demand for
pension management services is relatively inelastic to prices (fees), management companies tend to charge the maximum allowed by regulation, with no competition on fees.\textsuperscript{65}

106. The government could compare the current proposal with another option that involves the use of the current infrastructure for collecting contributions, centralizes the account management in a single institution, and creates competition in the fund management. That alternative model is based on the Swedish blind account scheme, with a single account manager—performed by the PFR—and multiple pure asset managers following the benchmark portfolio. In simple terms, ZUS will add an additional cell to their platform for collecting contributions from employees and will transfer the money and account information to the PFR, which will be the account manager. PFR will create records for each employee and transfer their money to the different portfolio managers, without identity identification. In this variant, portfolio managers would not have clients’ information, but they receive aggregated money from PFR representing contributions to each fund\textsuperscript{66}.

107. The separation of account and portfolio management functions would help to centralize business in areas with scale economies and to create competition in the areas where competition is welfare improving. The area of account management is an area with strong scale economies, where the objective is to keep records of individuals, and the fixed costs of hardware and software to register and maintain records do not vary with the number of records. Creating competition in record keeping may contribute to cost duplication. Record keeping is a standardized activity, which can be priced and allocated to the private sector through a competitive bidding.

108. Turning fund management into pure portfolio management would facilitate comparisons among alternatives. Each fund manager would offer investment portfolios that will follow a common lifecycle benchmark for each cohort. Portfolios will be valued at market price. Individuals will buy shares of these portfolios, and all transactions would take place through the account manager, so there is no direct link between portfolio managers and individuals. By standardizing the pension fund business and narrowing the responsibilities of pension fund managers exclusively to asset management business it is possible to keep costs low and transfer these lower costs to contributors. This design will also allow reducing the features of comparison to objective variables, such as fees and investment style.

109. In the presence of benchmark portfolios, differences among fund managers portfolios would be largely on investment style. Some managers might be index trackers, which would involve low fees, while others might decide to conduct more active portfolio strategies (stock picking and market timing). There should be a direct correlation between style and fees charged. Instead of letting the market to set the fees—which is unlikely to happen due to information asymmetries—the licensing process should take these issues into consideration. This scheme would also help to keep the number of asset managers under control.

\textsuperscript{65} Charing the maximum fee has been the case in all Central and Eastern European countries that have imposed caps on fees in their mandatory funded pension schemes.

\textsuperscript{66} If 1000 employees of the same age decide to contribute $1 each to fund manager X, PFR will create records for each of them, but the portfolio manager X will only see $1,000 receiving in their account, with no names attached.
110. **The value added of employers in selecting asset managers is limited.** Since benchmark portfolios are defined, and differentiation among fund managers is technical, there is little value in allowing marketing campaigns for attracting contributors. The effective differentiation is likely to be understood for a small number of companies, and consequently there will be a waste of resources that otherwise could be passed to contributors. Authorities may consider a random allocation of contributors among licensed fund managers, in order to allow companies to reduce further the fees. In any case, companies should be able to change asset manager.

_The role of the PFR_

111. **While PFR plays a significant role in the PPK, it may face some conflicts of interest.** PFR is involved in several areas of the PPK framework, including the transaction manager, the investment fund that would be the default option and the supervisor of the PPK scheme. While all these options are possible, it is essential to have a governance scheme that supports all these functions at the same time. If PFR is going to be the supervisor of the system and at the same time the fund that acts by default, PPK needs to have reporting lines and management completely different. While PPK institutions would be supervised by KNF, PFR will also be conducting supervisory activities.

112. **It may not be necessary for PFR to be the default asset manager.** Participation of the state in the financial sector should be justified by the presence of a market failure, which is not obvious in this case. In the case of the United Kingdom, the justification for a government sponsored fund manager (NEST), is that they are required to accept any company at a given fee. NEST is not a default provider, as it is being considered for the case of PFR, but an institution that accepts all potential clients. This is justified in the context that some fund managers might not be interested in offering services to small companies at a reasonable price. In the case of Poland, the understanding of the team, is that fund managers have to accept any company. Random allocation of companies would help to solve the problem of less active companies and would avoid unnecessary involvement of the state in financial sector operations.

_The fee structure_

113. **Success fees create distortion in the asset management objectives.** The PPK project allows fund managers to charge 0.5 percent and a 0.1 percent of the NAV associated to asset management fees and performance fees respectively. While at the time of the mission the parameter for defining the performance fee was not defined, the government was considering something similar to the cost of funding of the state. Thus, if the cost of funding of the government were 4 percent per annum, pension funds may claim the performance fees every time that the return of the fund goes above 4 percent.  

114. **The introduction of a performance fee would shift the focus toward obtaining short-term results, which conflicts with the strategic asset allocation objectives.** The strategic asset allocation focuses on building correlations among asset classes that may optimize the portfolio in the long term. By definition, this strategy does not focus on trading but simply in maintaining the

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67 Sooner or later, contributors would end up paying all the costs incurred by the fund management companies, including marketing expenses.

68 According to the enacted Law, success fee will depend on the fund’s rate of return and the reference rate.
right combination of assets. Some years returns might be good and some years might not be that good, but the combination of assets should bring the value of the portfolios towards the desired target at retirement age. The introduction of a performance fee shifts the focus towards short-term return and may damage the asset combination for achieving the long-term objectives.

115. This report recommends maintaining only the asset management fee and at the same time to ensure that the risk of the portfolio remains aligned with the benchmark portfolio. Ensuring that the risk of the portfolio is conductive to optimization of the future pension is the best way of designing the incentive structure. Since the use of performance fees interferes with that design and focuses the attention on short term results, it creates a wedge with long term portfolio optimization.

_The payout phase_

116. The PPK needs to establish an efficient mechanism for paying benefits after retirement age. The success of the Polish pension system will depend on its capacity to pay adequate pensions in the future. Considering the low pensions that the Social Security will be able to pay, it is essential for the PPK scheme to pay periodic benefits after retirement. The regulation should restrict the possibility of payment of lump sums to specific cases such as small amounts of assets. Allowing withdrawals of 25 percent of the assets at retirement age may damage the capacity of receiving adequate pensions in the future, and the payment of 120 monthly installments will bring individuals into poverty 10 years after retirement. 69

117. A more efficient payout phase should be able to offer longevity risk protection to participants and avoid sudden drops in replacement rates. Annuity products can offer that type of protection. As discussed above, and considering the case of Poland, variable income annuities are the most appropriate vehicle for paying PPK pension benefits. Variable annuities would offer some pick-up yield in their pensions in exchange for some volatility in the value of the pensions. While fixed annuities are an option, the value of the pensions is going to be lower than the ones that are required to achieve a minimum threshold of replacement rates.

118. This report recommends setting variable annuities as the default option for the payment of benefits of the PPK system. At the time of retirement, individual would have the option of different forms of benefit payments, including fixed annuities, variable annuities and phased withdrawals. The concept would be that by default individuals reaching retirement age will be offered a variable annuity, 70 under a competitive system, but they will be allowed to opt out and to receive some of the other alternatives. Regulation should only allow the payment of lump sum in cases of small amounts, for example that the accumulated amount is inferior to the value of the one month or two of salary of the individual. The justification for restricting the payment of

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69 In addition, given the low pensions of the system, it is not advisable to allow individuals withdraw money for housing purposes. While voluntary pension system in other countries may include this feature, the tradeoff with poverty would be negative in Poland.

70 Variable annuities are less onerous in terms of capital requirements for insurance companies and allow participants to participate in the return of investments. As life expectancy after retirement is still high, individuals have some capacity to take investment risks.
benefits is that the government is giving tax benefits, making matching contributions and forcing employers to offer these benefits.

119. **The introduction of annuities will create the need of regulating the creation of annuity providers and further development of the fixed income market.** Some of these ideas were already designed for the case of the second pillar, but never implemented. The introduction of annuities, managed by life insurance companies, will enhance the role of these institutions in the domestic fixed income market. The potential demand from long-term fixed income securities from these institutions will help to complete the bond market, including government and corporate bonds.