

ATP's investment approach

1. Introduction

ATP Lifelong Pension offers both guarantee and lifelong pensions. ATP's investment approach, developed over many years, is aligned with the pension product. The basic principle of the investment principle is that ATP's members must have a high degree of security for the guaranteed lifelong pension in the form of ATP having sufficient funds which, when invested safely, can honour the guaranteed pension benefit payments. This allows ATP, together with the state pension, to provide basic pensions as the first pillar of the Danish pension system.

This means that ATP ties up a large proportion of the total funds in "safe investments". The remainder of the funds are invested in a riskier investment portfolio which is expected to provide higher returns than the more secure investments without creating too great a risk of not being able to honour the guaranteed pensions.

The portfolio of "secure investments" is called the hedging portfolio, and its purpose is to enable ATP to honour the guaranteed pensions. The hedging portfolio, therefore, only provides the nominal, guaranteed payments to ATP's members.

The objective of the investment portfolio is to generate a return that will allow, in part, the building of reserves for, e.g., financing increased life expectancy, partly to increase the guaranteed pensions via bonuses and thereby safeguarding the real value for pensioners.

This document describes the basis for this division and offers more details related to the implementation of both the hedging and the investment portfolio. In respect of the investment portfolio, particular attention is devoted to ATP's factor-based approach.

2. The main framework conditions for ATP's investment approach

The framework conditions for the investment approach arise partly from the ATP Act and partly from regulations

and frameworks related to accounting and risk management.

Determining the size of pension benefits based on the contributions made is based on the ATP Act. The size of benefit payments relative to contributions changes over time. Members purchase pension for part of the contribution (the guarantee contribution) in accordance with a tariff based on the interest rate level at the time of determining the tariff, which is valid for one year at a time. The guarantee contribution has over the past few years amounted to 80 per cent of the total contribution (after Labour Market Contribution and payments for survivor benefits). The pensions purchased constitute ATP's guaranteed pension payout.

ATP calculates the pension provisions at market value. The calculation is based on discounting at market interest rates on expected guaranteed pension payout taking into consideration life expectancy. The valuation means that the pension provisions are changed when market interest rates change. This makes the value of pension provisions sensitive to changes in market interest rates, and this uncertainty constitutes the interest risk for the guaranteed pensions.

The overall principle for ATP's risk management is that total risk (risk consumption) must be aligned with the bonus potential. The terminology is that there must be "an appropriate level for risk". The bonus potential, which constitutes ATP's reserves, expresses the difference between the value of ATP's total assets and ATP's guaranteed pensions. The larger the bonus potential, the larger capacity ATP has to assume risks, including financial risks. Conversely, a smaller bonus potential will reduce the capacity to assume risk. Specifically, the Supervisory Board has determined that the risk consumption¹ must at all times be less than a risk budget determined at half the bonus potential. Risk is measured with a relatively short timeframe of 3 months.

3. ATP's investment approach – the hedging portfolio

The combination of risk calculation with a short timeframe

¹ The Supervisory Board has determined that risk consumption is measured as Expected Shortfall (ES99pct., 3mths.), which indicates the average of the 1 percent greatest losses in various market scenarios with a 3-month timeframe.

and the value of guaranteed pensions being sensitive to changes in market interest rates is the reason for ATP's investment approach containing a division of investments into a hedging portfolio and an investment portfolio. The purposes of the two portfolios differ: The hedging portfolio aims to reduce the interest risk for guaranteed pensions ("hedging the interest risk"), and the investment portfolio must invest to generate a high return in order that ATP can strive to maintain the real value of pensions in the long term. The results of Hedging and Investment are measured separately in ATP's financial reporting.

ATP's approach to hedging of pension provisions to a great extent eliminates the market risk related to changes in the value of pension provisions ("full hedging"). This provides the greatest possible scope for the investment portfolio being able to assume market risk. From an investing point of view, hedging the interest risk serves to reduce the risk such that total risk capacity can be used to assume other types of market risk which are expected to generate a higher risk premium.

The hedging portfolio, which primarily consists of long-term bonds and interest swaps, reflects the pension liabilities in terms of risk². The basis for the hedging portfolio³ consists of approx. 85 per cent of ATP's assets. The principle underlying Hedging goes back to the first half of the "00s", and for more than a decade ATP has worked with

4. ATP's investment approach – the investment portfolio

The objective of the investment portfolio is to generate a return that will allow, in part, the building of reserves for, e.g., financing increased life expectancy, partly to increase the guaranteed pensions via bonuses and thereby safeguarding the real value for pensioners. In modern finance theory, long-term returns are predominantly considered as compensation for assuming market risk, in other words, to be willing to risk losing part of the funds invested. The compensation for market risk is additional to real interest and compensation for expected inflation.

The return required in the longer term to maintain the real value can be estimated in a simplified version on the basis of the guarantee contribution in recent years has constituted 80 per cent of total contributions and that the remaining funds have been allocated to the bonus potential. If this 80/20 relationship exists over the long term, the return on the bonus potential (the 20 per cent) to increase the value of total assets (the 100 per cent) by, for example 2 per cent, must be 10 per cent. In this simplified example, the required rate of return on the bonus potential is 10 per cent after tax and expenses. This is slightly simplified relative to practice, but provides a reasonable and quick estimate.

Based on Society Assumptions for 2022 (Samfundsforudsætninger for 2022), which is used to calculate pension prognoses in Denmark, the expected return on various investments is below 10 percent p.a. So how can ATP expect to realise a net return of 10 percent measured relative to the bonus potential? This is, generally speaking, down to three issues: i) that ATP utilises its investment capacity effectively, given that funds not tied to the hedging portfolio are available for the investment portfolio; ii) that ATP has a systematic and balanced utilisation of its risk budget via a factor approach, and; iii) that ATP adjusts the risk level of the investment portfolio in a systematic and balanced way such that the risk utilisation remains optimal at all times.

4.1 Utilisation of investment capacity

Funds that are not tied up in the hedging portfolio as a result of the use of financial instruments are available to the investment portfolio. The fact that ATP has elected to divide investments into a hedging portfolio and an investment portfolio does not mean that the funds are considered to be separate. The division is intended to illustrate the purpose of various parts of the investments and to have a higher degree of transparency in communications regarding ATP's investment results, but not to split up funds. ATP's investments consist of the hedging portfolio and the investment portfolio combined.

Dividing investments into an investment portfolio and a hedging portfolio makes the bonus potential the "natural" capital for the investment portfolio. However, the investment portfolio invests more funds than funds corresponding to the bonus potential, as the investment portfolio has access to capital (liquidity) from the hedging portfolio. Since ATP can invest further funds than the bonus potential, ATP can expect a higher long-term return than by only investing funds corresponding to the bonus potential.

In addition to the capital from the hedging portfolio, ATP uses derivatives. The use of derivatives is intended to ensure a high degree of diversification in the investment portfolio. This also contributes to a high expected return per risk-DKK of the investment portfolio. Derivatives are also utilised, as the risk can be easily scaled up or down using the most liquid futures contracts (also see below in the next section).

ATP manages the invested capital with a risk focus. This way, ATP differs from many other investors, as the primary limitation on the investment portfolio is risk size rather than capital. The two relevant issues are whether an appropriate amount of risk is taken and whether there may be a liquidity shortage. Both these matters are subject to comprehensive measuring, management, control and reporting with a view to safe-guarding ATP against events which could jeopardise pensions. ATP also focuses on procedures and

² Hedging reflects the interest rate risk of pension liabilities.

³ Measured as ATP's assets minus the bonus potential relative to ATP's total assets.

competencies being aligned with the needs of the investment approach.

ATP's investment portfolio aims at an absolute return in DKK, partially via a sufficient level of market risk in the portfolio, partially by aiming for a high, risk-adjusted return (RAR). When ATP measures a percentage return for the investment portfolio, it can be calculated relative to the size of the bonus potential. As ATP's invested capital is larger than its bonus potential, this obviously brings about high percentage returns when things are going well for the investment portfolio and vice versa when things are going less well, which is communicated in connection with financial reports and the like. In ATP's investment portfolio, the return figure is related to the capital which carries the investment risk. This is a generally approved principle, and in the case of ATP, the bonus potential carries the investment risk.

Box 1: ATP'S total investment capacity

Measured relative to funds corresponding to the size of the bonus potential, the investment portfolio can invest more funds than the bonus potential. The ratio between total invested funds and the bonus potential can be measured in various ways. The simple approach is to take the ratio between the market value of investment assets in the investment portfolio, DKK 414bn, and the bonus potential, DKK 160bn, which results in a factor of 2.6. This method cannot, however, allow for risk exposure in the portfolio, and excludes the risk exposure via derivative positions. In order to recognise the risk exposure including derivatives, the ratio can be measured based on ATP's generally applied model for market risk management and measuring of risk consumption. The risk in ATP's investment assets equals DKK 425bn invested in a standard market rate portfolio with medium risk and 15 years until pension. A risk-based calculation gives a factor of 2.7.

4.2 Dynamic risk level adjustment

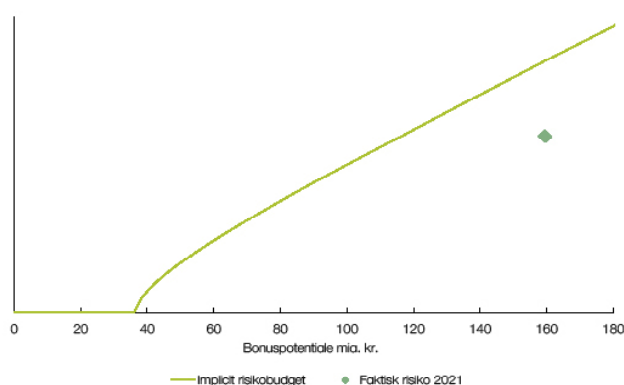
An alternative source of higher return is for ATP to systematically adjust the investment portfolio risk level. This involves adjusting the risk level upwards when the bonus potential grows. The systematic approach makes a long-term contribution to ATP achieving a slightly higher risk level and thereby also a higher return than would otherwise be the case. Figure 1 shows how the implicit market risk budget for the investment portfolio depends on the bonus potential level. The implicit risk budget applies the risk tolerance determined by the Supervisory Board and at the same time adjusts for other risks such as other market risks, life expectancy risks, counterparty risks, and operational risks.

Active risk level management enables ATP to make effective use of the risk budget. The "price" of being able to adjust

the risk level is that a large proportion of the investments have to be able to be turned over quickly without having a significant effect on the markets. ATP has designed its investment portfolio such that it is possible to significantly reduce the risk level and – in a historical perspective – sufficiently to be able to protect the bonus potential.

From a risk management point of view, too, ATP's investment approach is based on continuous adjustments to the investment portfolio risk level. This means that the risk is reduced when it becomes too great. This partly mitigates the effect of losses. Dynamic adjustment of ATP's risk level has been a fixed part of the investment approach at ATP for the past 15 years.

Figure 1: Market risk and implicit investment portfolio risk budget



Note: Investment portfolio market risk expresses the average of the 1 per cent of highest losses over a three-month timeframe. The implicit investment portfolio risk budget is arrived at by adjusting the total risk budget for risk consumption for other market risks, life expectancy risks, counterparty risks, and operational

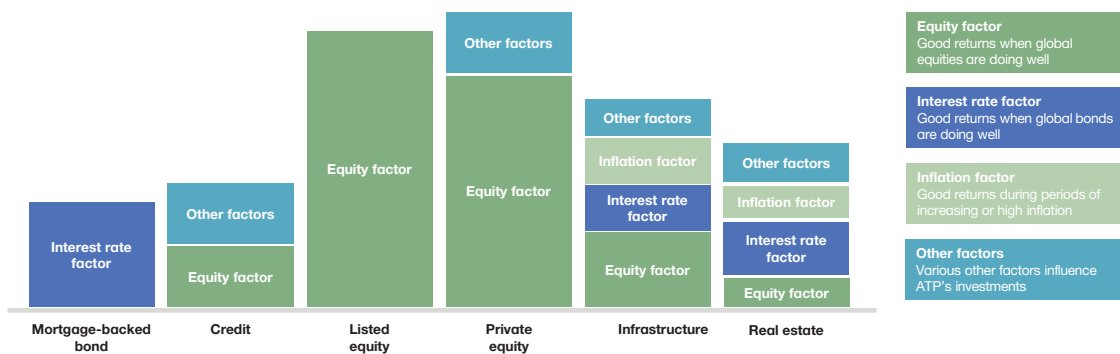
4.3 Risk diversification via factor approach

A third source of expected higher return is systematic utilisation of risk diversification. Risk diversification results in a higher return per risk-DKK. This means that with a given risk budget, ATP gets the biggest possible return for the money. The best possible utilisation of the risk budget is obtained via a widely invested investment portfolio. A significant purpose of ATP's factor approach is to ensure a high degree of risk diversification in the investment portfolio.

Since 2015, ATP has developed its investment approach to investment management by applying risk factors: The Equity factor, Interest rate factor, Inflation factor, and Other factors. The idea is that all investments consist of a number of basic building blocks – factors – which can be combined in various ways to achieve an investment portfolio with the desired risk profile. This enables comparison between all investment activities on a common basis.

This is particularly of great importance to alternative, illiquid investments. The risk profile of alternative, illiquid investments, such as private equity, infrastructure, real estate and certain types of credit, is generally less transparent than that of more traditional, liquid investments such as bonds and listed equities. By building all asset classes

Figure 2: Factor-based risk composition of selected assets

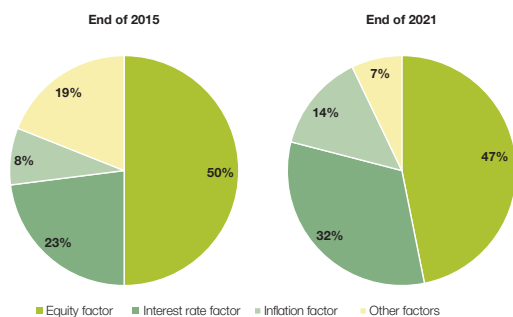


around the same four key factors, a clear framework for our risk understanding is created. Alternative illiquid investments are thus composed of the same four key factors that are found in the traditional liquid investment universe. Figure 2 illustrates how different assets can be composed from the four risk factors.

A key element in ATP's investment strategy is the Supervisory Board's issuance of a guideline for the long-term composition of the four risk factors in the investment portfolio. This guideline should be seen as a long-term 'anchor' for risk allocation.

ATP's long-term guideline offers a balanced greater risk for the two major factors Equity factor (35 per cent) and Interest rate factor (35 per cent), while Inflation factor and Other factors play a lesser role (15 per cent each). The total risk is less than the sum of risk for the 4 risk factors, since there is a significant diversification gain. The actual portfolio allocation may deviate from the guideline at any one time due to market conditions and active investment decisions. Figure 3 shows the factor distribution at the end of 2015 compared to the factor distribution at the end of 2021.

Figure 3: Risk allocation in the investment portfolio



The factor approach enables ATP to derive the greatest return from the investment risk to which ATP is exposed. Inside the scope of opportunity, the best return is achieved via a balanced portfolio. The total portfolio aims at a relatively static composition and is not adjusted to short-term

tactical considerations.

The ability to predict the markets, to act at just the right time, and effectively execute large changes to the total portfolio is limited. Value creation via the creation and maintenance of a portfolio which is balanced relative to types of risk, markets, and geography, and where investments are based on professional skills and careful implementation is therefore greater than continuous tactical adjustments of the overall composition of the investment portfolio. The investment philosophy behind the balanced guideline is known as an 'All Weather' approach, alluding to the fact that this portfolio is robust in the face of variations in the investment climate.

The development of investment processes has been a significant continuing focus area and will continue to be so in the years to come. Investment processes, other than implementation of the factor approach, have been focused on 3 areas:

- How to best manage investments such that the factor approach – which is a method, but not an absolute truth – can create the framework for working with investments without becoming a limitation?
- How to include ESG principles in the factor approach?
- How does ATP's investment return look when compared with other investors which have a similar investment approach?

4.3.1 Managing ATP's investments

The fact that the overall portfolio aims for a relatively static composition does not mean that the portfolio does not change. Investments are continuously made in sub-portfolios of the investment portfolio, based both on short-term considerations and many other considerations. Portfolio investments are divided into sub-portfolios, each of which has a delimited investment universe and an investment approach adjusted to the individual investments. The investment approach makes it possible to analyse and compare investments across asset types, for which reason the factor approach is included to assist in investment decisions. The expected return on an investment, for example, can be

determined based on a comparison with the return on other investments exposed to the same underlying risks. This is particularly relevant for alternative, illiquid investments, where it is difficult to determine the required rate of return.

As an investor, it is essential to define a required rate of return for all individual investments within one and the same framework. The factor-based approach provides a consistent and uniform framework. Market prices can be applied to each of the four risk factors included in an infrastructure investment based on their size, which reflects the loss risk of the risk factors. The greater the exposure to a risk factor, the greater compensation is expected by investors. The market price for exposure to a risk factor is not the same for all four risk factors. An investor will demand higher compensation for exposure to 'Other factors', including illiquidity, than to the same exposure to Equity factor. Figure 4 shows an example of the construction of a required rate of return for an illiquid investment.

Sub-portfolios of the investment portfolio are managed via the delegation of mandates to investment teams. Investment teams are predominantly internal teams and ATP's investment subsidiaries, including ATP Ejendomme and ATP Private Equity Partners. In recent years, ATP has been working towards determining clear investment mandates for the respective investment teams such that overall decisions regarding investment composition is separated from the more specific selection and daily management of individual investments. This means delegating decisions to specialists in various investment areas, giving ATP the best possible utilisation of the risk budgets distributed to the investment teams.

4.3.2 ESG principles and the factor approach

In the factor-based investment strategy, the risk associated with each investment is determined on the basis of the four risk factors, depending on the types of risks to which the investment is exposed. The factor approach includes ESG-related elements for the sub-portfolios where it matters. For example, climate considerations are integrated into investments by including implementation by companies of the TCFD recommendations (Task Force on Cli-

mate-related Financial Disclosures). Governance criteria are also included in ATP's assessment of listed equities. Please see the ATP Group's reports on responsibility in investments <https://www.atp.dk/en/dokument/responsibility-report-2021>.

4.3.3 Perspectives on investment returns

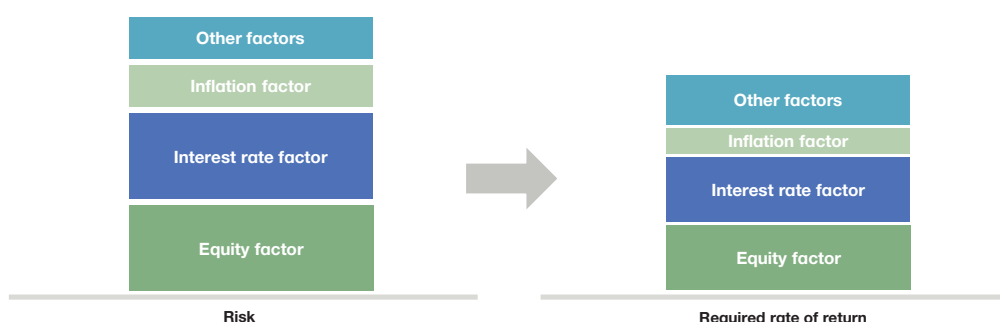
ATP's investment approach is driven by clear focus on risk, and the division of ATP's investments into a hedging portfolio and an investment portfolio reflects this. The principal objective of the hedging portfolio is to safeguard the guaranteed return and thus ensure ATP's ability, at all times, to deliver on the guarantees issued. The objective of the investment portfolio is to generate a return that will allow, in part, the building of reserves for, e.g., financing increased life expectancy, so that ATP secures pensions for a whole lifetime and to increase the guaranteed pensions, thereby safeguarding the real value for pensioners.

The investment portfolio, as a general rule, consists of funds from the bonus potential. ATP exploits the fact that funds not tied up in the hedging portfolio as a result of the use of financial derivatives also being available for investment in the investment portfolio. In practice, this means that the investment portfolio can operate with a higher statement of financial position than the bonus potential, but within the same risk budget.

When ATP places the return on its investments in a greater perspective, it is reasonable to compare with other investors with similar portfolio management opportunities. ATP collaborates with a range of other investors with similar portfolio compositions, one of the purposes of which is to be able to compare returns. The composition of various investors' portfolios follows the same general principles for risk diversification and portfolio management, but are obviously rather different at the individual investment level. For this reason, comparisons have to be seen over a longer period to be useful in assessing whether ATP is doing well or less well in terms of investment return.

When applying a greater perspective to investments, the total portfolio is divided into sub-portfolios, and the invest-

Figure 4: Example of construction of required rate of return for an illiquid investment



Note: The market price for exposure to a risk factor is not the same for all four risk factors.

ment approach makes it possible to find comparable investments. For some sub-portfolios, such as Danish equities, it makes good sense to use traditional return com-

parisons. For other sub-portfolios, such as private equities, things are more difficult, and ATP has elected to use the division into risk factors to compare the return on private