



Second Swedish National Pension Fund/AP2  
2007/2008

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Unless otherwise stated, the portfolio assets referred to in this report are “allocated exposures”. In addition to booked fair values, these also refer to allocated (but not yet invested) liquidity for the specific class of asset, and the liquid funds held as collateral for positions already taken in derivative instruments. Classes of asset, derivative instruments and liquid funds are reported individually in the balance sheet at their fair values.

All monetary amounts are expressed in Swedish kronor and abbreviated as SEK k (thousand), SEK million or SEK m (million) and SEK billion or SEK bn (thousand million).

The 2007 Annual Report is available as a separate publication.

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*“In spite of a turbulent year on the world’s stock markets, AP2 can post a favourable return on invested assets”, says CEO Eva Halvarsson.*

*Mia Tëgbrant and Camilla Jenedahl from Risk Management. “The idea is to contribute to a higher return – at an appropriate level of risk.”*

*Tomas Morsing, Head of Quantitative Strategies. “Opportunities for cutting costs and boosting return at a lower level of risk.”*

*Business Intelligence and Data Warehouse are key elements of AP2’s IT strategy.*

*Anders Strömblad, Head of Alternative Investments, explains the AP2 approach to Private Equity portfolios.*



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# This is the Second AP Fund

## Successful fund manager:

The Second Swedish National Pension Fund/AP2\* is a successful manager of national pension reserve assets. The Fund, based in Göteborg, is one of five 'buffer' funds within the national pension system.

## Future pensions – an important task:

The Second AP Fund's overall target is to ensure that the Swedish pension assets for which it is responsible are optimized.

## Innovative organization:

The Second AP Fund, which started operations in 2001, is a young, innovative organization, with a strong team spirit, alert to its responsibilities. This promotes a stimulating work environment.

## Long-term investment horizon:

The Second AP Fund, whose board is appointed by the Swedish Government, conducts long-term investment of assets based on efficient risk management, aided partially by analytical models developed in-house.

## Solid return:

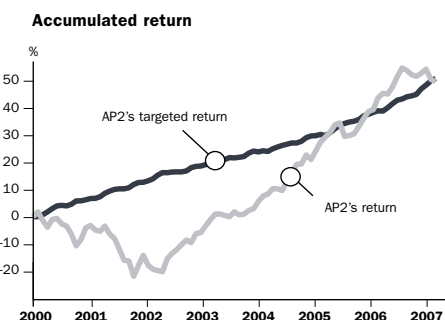
Return has averaged 6.0 percent per year, since 2001. The Fund has thus attained its targeted average return of 6.1 percent since its inception.

\*The Second AP Fund is officially translated as the Second Swedish National Pension Fund/AP2. In body text, for convenience, this is shortened to the Second AP Fund and, in some cases, AP2.

**At year-end 2007, the Fund had assets of SEK 227.5 billion under management.**

## 2007 in brief

- Since its inception, and including net profit for the twelve months ending December 31st 2007, the Second AP Fund has posted an annual average return on investment (ROI) of 6 percent. This is consistent with the ROI average considered essential for the Fund to fulfil its long-term responsibilities within the Swedish pension system.



- The Fund's assets under management totalled SEK 227.5 billion as per December 31st 2007, an increase of SEK 10.7 billion compared with the preceding year. During the year, the Fund reported a net inflow of SEK 2 billion. Net profit for the year amounted to SEK 8.7 billion.
- The Fund posted a return of 4.2 percent on the total portfolio, before commission fees and operating expenses. If these expenses are included, the portfolio generated a return of 4.0 percent.
- The Fund posted a relative return of -0.4 percent for market-listed assets, before commission fees and operating expenses, for 2007. This is largely attributable to the rebalancing effects that have arisen due to high market volatility. A new rebalancing process has been initiated.

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- Alternative Investments generated a return of 13.4 percent.
- The solid growth in Fund capital is primarily attributable to the favourable growth of global stock markets, leading to substantial gains on Fund investments in emerging and Asian markets, apart from Japan. The Fund's relatively limited currency exposure of 11%, especially in US dollars (where hedging costs are high) has ensured that the decline in the US dollar rate has had only a limited impact on absolute return.

## Three-year review

	2005	2006	2007
Fund capital, SEK m	190 593	216 775	227 512
Net inflows from RFV/National Social Insurance Board and liquidation/special funds, SEK m	2 905	1 676	2 019
Net profit for the year, SEK m	29 568	24 506	8 718
Annual return on total portfolio, before commission costs and operating expenses, %	18.7	13.0	4.2
Annual return on total portfolio, after commission costs and operating expenses, %	18.5	12.8	4.0
Relative annual return on market-listed assets, before commission costs and operating expenses, %	0.2	0.2	-0.4
Active risk, ex post, %	0.5	0.7	0.7
FX exposure, %	11	12	11
Under active (incl. enhanced) management, %	90	93	96
Under external management (incl. investments in private equity funds), %	28	17	24
Share of management expenses, incl. commission costs, %	0.16	0.15	0.13
Share of management expenses, excl. commission costs, %	0.07	0.06	0.06

\* Relative return refers to the difference in return between portfolio and benchmark index.

# Target, result & efficiency

## PERFORMANCE CONSISTENT WITH TARGETED RETURN

*Calculated over the six years since 2001, the Second AP Fund's combined profit is in line with the targeted long-term return applied since the Fund's inception.*

The Second AP Fund's assets are managed with a view to generating a buffer for future pension disbursements as part of the reformed national pension system.

To generate the greatest possible benefit in this role, the Fund's primary focus is to maximise return on investment, so as to minimise the consequences of automatic balancing within the pension system over the longer term. The target established for ROI in real terms has been set at 5.0 percent, of which 4.5 percent from the strategic portfolio and 0.5 percent in relative return.

The Fund's activities are long term and are therefore assessed over a long period. Rolling five-year periods are considered adequate for measuring the performance of actively managed assets, while that of the strategic portfolio may need to be assessed over a more extended period.

### Inadequate absolute return in 2007

To ensure attainment of the pension system's long-term overall objective, the Second AP Fund deems the buffer funds must achieve a certain joint annual return on investment. If the AP Funds satisfy this long-term target, and if Sweden's demographic

trend develops in line with the population forecasts published by SCB (Statistics Sweden), there is a good chance that the pension system, at least the national pension system, will function relatively smoothly.

The target for real return on investment is 5 percent. The graph below presents absolute return in relation to the Fund's real target for return on investment since its inception.

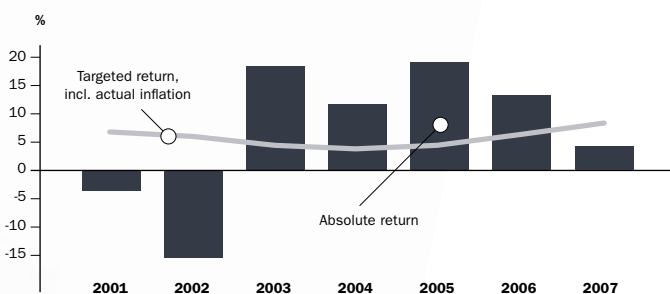
The Second AP Fund posted a real return of 0.8 percent for 2007. This was less than the Fund's targeted return, although the accumulated return over the seven years since its inception remains on target, despite a troubled start. See bar chart below.

The key reasons for the solid return generated over the full period are the high percentage of equities in the portfolio, combined with low currency exposure. In 2007, these factors have again been crucial to the Fund's performance.

### Relative return

The Second AP Fund's targeted relative return on investment is 0.5 percent. This means that the Fund must outperform the selected strategic portfolio by 0.5 percentage units. This is a measure of the Fund's success in managing its assets to generate

Seven years' statistics for absolute return, 2001 - 2007



For the past five years, the Second AP Fund has exceeded its long-term target for return on investment.

### Risk utilisation within prescribed limits

Swedish equities was 1.9 percent, foreign equities 1.7 percent and for fixed-income assets 0.2 percent. The Fund's degree of active risk has been concentrated to a limited number of mandates, including a portion of the Swedish equities portfolio as well as external global equity and asset allocation mandates.

### Cost efficient

managers have been able to generate high returns over a considerable period.

Conversion to a “core/satellite” strategy in 2004 has made the Fund’s portfolio management more cost-efficient. In line with this strategy, the Fund has organised its asset management activities into “low risk” (assets with broad exposure to fixed-income and equities markets, managed in-house and at low cost) and “active risk” (assets involving greater active risk). Broad exposure to less mature markets requires a higher level of specialist expertise and is therefore often managed under external mandates.

Year	Share of portfolio management costs, including commissions (%)	Share of portfolio management costs, excluding commissions (%)
2004	0.22	0.07
2005	0.15	0.06
2006	0.14	0.05
2007	0.12	0.05

Following the build-up phase, costs as a percentage of total assets have declined.

# Positive return in turbulent times too

*The past year is likely to go down in history as one of exceptional turbulence on financial markets. Following an extended period of financial stability, with the majority of asset classes noting strong growth during the first half of the year, the picture underwent a radical transformation during the summer months. Even so, the Second AP Fund is able to report a favourable return for the fifth year in succession.*

Worrying signals from the most important financial markets rapidly followed in the wake of a US real estate loan crisis. Anxiety about the situation meant that key capital market functions failed to operate efficiently and it was only the resolute action taken by central banks that prevented more serious consequences.

The high volatility of the markets, to a great extent fuelled by continued uncertainty about where these credit losses might be lurking in the international financial system, continued through the autumn and even into early 2008. The main explanation for this lack of transparency is that hedge funds and structured credit instruments are subject to very limited requirements when it comes to declaring positions taken, a fact that needs to be addressed over the next few years to prevent similar situations arising in future.

Despite the turbulence, the Second AP Fund posted a positive return for the fifth year in succession. The return posted for 2007 confirms that the Fund has continued to meet its targeted long-term return since it was established. Although no guarantee that it will continue to do so in future, this does demonstrate the important role the Fund plays as part of the Swedish national pension system.

Nevertheless, I wish to make it very clear that I am far from satisfied with our relative return of minus 0.4 percent, which is far below our targeted return of 0.5 percent, after costs.

This may largely be attributed to the fact that these volatile markets had a negative impact on our portfolio, caused by rebalancing, i.e. the way we replicate our index. We have now initiated a new rebalancing process, designed to reduce the impact of market volatility on relative return.

A new portfolio management organization was implemented during the year. This comprises four teams: Swedish Alpha Strategies, Global Alpha Strategies, Quantitative Strategies and External Managers. A special organization for in-house tactical asset allocation and rebalancing was also started during the autumn.

Although we have had problems with rebalancing, it is worth mentioning that Swedish Alpha Strategies and External Managers both contributed a positive relative return. Within Quantitative Strategies, the European and North American mandates, which are managed in-house, have performed well in spite of the turbulent market.

I believe all parts of the puzzle necessary to achieving good results are now in place. Of course, this is based on what has been achieved with our strategic portfolio, in which respect we have so far proved highly competitive. We must be better at exploiting alpha generators. Our strategy is to create favourable conditions for generating alpha returns by adopting a large number of independent positions in different asset classes.

Founded on the management strategy established during the year, it is now up to all of us to show that we can achieve a favourable and stable result. This will be attained with the support of a number of new colleagues who have joined the organization, contributing new expertise and experience. To clarify and focus attention on operational goals, a new system has been launched to monitor their realization.

Our successful business support strategy continues to develop steadily. Increasing automation in the management of internal processes, conducted within the framework of this strategy, enables additional time and resources to be invested in greater in-depth analysis within our key business processes. Our new risk system and investment in Data Warehouse are two examples of how we are moving further down this road.

We are also continuing to exercise our active governance role, both in terms of initiatives and investments. In March 2008, the Fund is hosting a global meeting on Sovereign Wealth Funds and Nordic corporate governance. This presents a good opportunity to place the Second AP Fund and Göteborg firmly on the map, while also helping ensure that governance issues are addressed and discussed.

This year's annual report, like last year's, is in two sections: a formal section and one that is less so. The less formal section aims to provide greater insight into the nature of our job and the way the Swedish national pension system operates, while at the same time presenting our staff and thereby illustrating some of the key values on which our activities are based – openness, creativity and professionalism.



A handwritten signature in blue ink, which appears to read 'Eva Halvarsson'. The signature is stylized and fluid.

Eva Halvarsson  
CEO



THE SWEDISH PENSION SYSTEM

*A robust structure...*



*...with the AP Funds as buffers*

*Seen in the broader context of the national budget,  
the Swedish pension system is a robust structure.*

*It can tolerate significant economic swings, as well as demographic change.*



Since pension benefits derive from several sources, the recipient also receives several pension statements. These indicate the amount of pension entitlement accrued to date. In the case of the national retirement pension, future beneficiaries receive their pension statement in an orange envelope every year.

### The base of the pyramid: the national retirement pension

The income-based pension system is designed to be autonomous of state finances. Basically, future pensions are determined by the size of individuals' wage incomes, based on income generated over an entire working life.

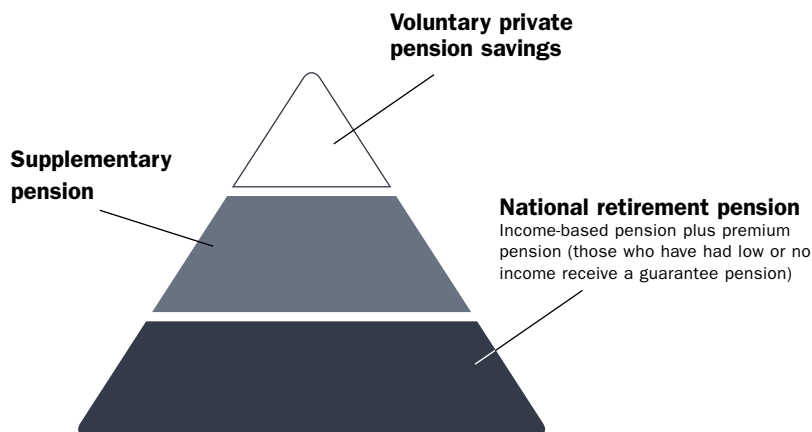
The national retirement pension consists of an income-based pension, a premium pension and a guarantee pension. Every month, 18.5 percent of an employee's pensionable income is paid into the system. Of this, 16 percent contributes to the income-based pension and 2.5 percent to the premium pension.

The size of the income-based pen-

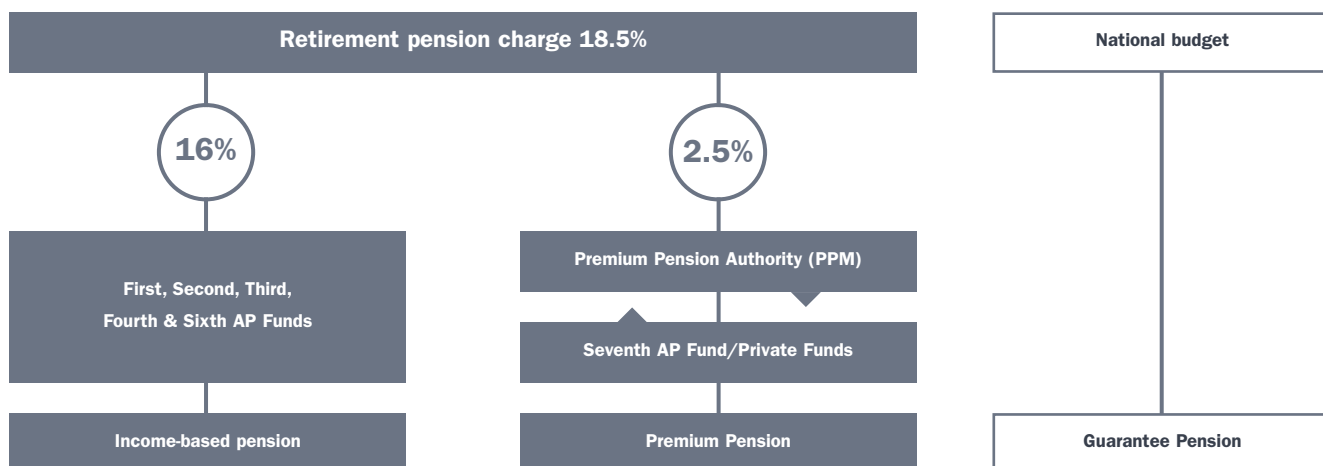
sion is, just as it sounds, dependent on the size of the pensionable income generated during an individual's working life. The system functions rather like a common 'deposit account', where the balance is determined by the amount deposited and interest earned. However, the money does not simply sit there

waiting to be deposited in an account. It becomes part of a "distribution system", whereby pension disbursements are financed on a pay-as-you-go basis from the monthly payroll tax paid into the system by employers.

The size of the premium pension depends on the return from the mutual



The Swedish pension system may be compared to a pyramid comprising three levels. The national retirement pension forms the base of the pyramid and the primary source of income for the majority of future retirees. The next level consists of the supplementary pension, a benefit funded by employers, which covers almost all those who have been gainfully employed in Sweden. The top of the pyramid consists of voluntary, private pension savings.



Contributions are calculated on the basis of pensionable salary. Of this, 16 percent contributes to the income-based pension and 2.5 percent to the premium pension.

funds in which these capital assets are invested. Where the premium pension is concerned, each future pension beneficiary determines how the money, equivalent to 2.5 percent of pensionable income, shall be invested.

Those with low or no income are covered by a guarantee pension, funded from taxes.

### Robust structure prevents collapse

Seen in the broader context of the national budget, the Swedish pension system is a robust structure. It can tolerate significant economic swings, as well as demographic change. Special control mechanisms are built into it to ensure financial autonomy.

The total pension liability is adjusted on an ongoing basis, to reflect changes in the income index, i.e. to keep pace with changes in average income in Sweden. This is designed to counteract an actual decline in purchasing power caused by possible inflation. There is, however, an

exception, when this basic principle is ignored.

This exception is known as “automatic balancing”. Should Sweden enter a prolonged period of weak economic conditions and slow job growth, with an ageing population and an unacceptably low number of childbirths, it would have to deviate from its income-indexed principle. Adjusting the income-based pension at a pace commensurate with growth in average income, without jeopardising the system’s long-term stability, would be impossible – and make increased pension contributions inevitable.

### Ongoing balancing act – that looks after itself

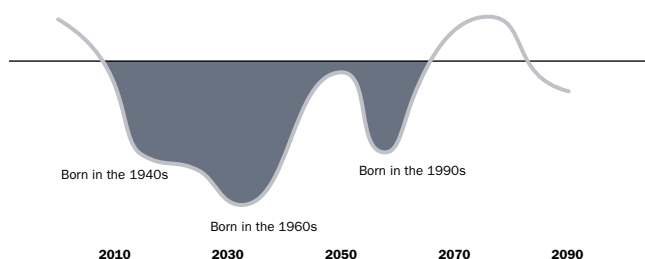
The assets of the national pension system comprise two elements. The combined assets of the “buffer funds” and what are referred to as “contribution assets” which account for close to 90 percent of total pension assets. Expressed simply, these funded assets are the sum of all pension

contributions made during the year multiplied by the assumed average period each krona is expected to remain within the system, from initial contribution to final disbursement. Liabilities consist of pension entitlements due on each occasion.

To ensure that the system is robust, its assets must exceed its combined pension liability. This relationship, reflected in the “balance ratio”, can be determined by dividing the pension system’s assets by the total pension liability. Where the balance ratio exceeds 1, assets outweigh pension liabilities, and pensions continue to be adjusted upwards in line with the income index. However, where the balance ratio is less than 1, pension liabilities outweigh assets. When this happens, the automatic balancing function is applied. At this point, the accrued pension liability and the ongoing pension disbursements are indexed according to the change in balance index rather than income index. This continues until the

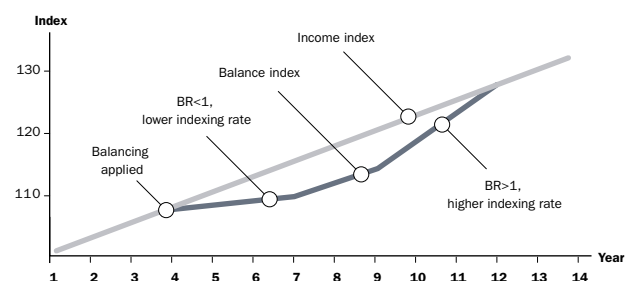
### Impact of retirement peaks on pension system

(Source: Swedish Social Insurance Administration)



When baby-boomers retire, they create a demand for a buffer in the pension system. The system’s disbursements are likely to exceed contributions within the next two years, when the large post-war generation of baby-boomers retire.

### The way balancing works (Source: Swedish Social Insurance Administration)



The balance ratio (BR) represents the system’s assets divided by combined pension liability. If the balance ratio is less than 1, balancing is applied. This means that pension liability and pensions are adjusted upwards only by wage growth multiplied by the balance ratio. This process continues until parity is re-established.

system is in balance again. In brief, this means that pensions are adjusted upwards more slowly than the income index.

### The pyramid features an important buffer zone

The role of the national pension funds, known as the AP Funds, is to even out discrepancies that may arise from fluctuations in the level of pension contributions received and pension disbursements made, especially in the long term. The AP Funds manage the assets that comprise the income-based pension system.

When baby-boomers retire, they create a demand for a buffer in the pension system. The system's disbursements are likely to exceed contributions within the next two years, when the large post-war generation of baby-boomers retire.

The AP Funds are dimensioned to compensate for such imbalances without having a negative impact on pensions.

The First, Second, Third and Fourth

AP Funds manage the majority of the buffer capital that comprises a small amount of the income-based pension system's assets. The Sixth AP Fund also manages buffer capital, if on a smaller scale, but this is subject to different investment regulations.

Income-based pension contributions, paid on a monthly basis by all employers, are transferred to the First to Fourth AP Funds. Each Fund receives a quarter of the pension contributions received and funds a quarter of pension disbursements made. Monthly disbursement of the national retirement pension is therefore handled via the buffer funds.

In principle, contributions received during a given month are the same as the sums disbursed in the form of payments to pensions for the same period. This means that the income-based pension system generates almost no savings at the national level. For those covered by the system, however, the pension contribution may be seen as a form of saving.

## The AP Funds

### – a small part of the pension system

*The Second AP Fund's overall task is to manage the pension assets with which it is entrusted as a buffer within the pension system. As far as is possible, it shall strive to minimise any negative impact on future pensions that might derive from the negative development of the unfunded portion of the pension system.*

In this context, the AP Funds constitute a relatively modest part of the total pension system. A slight weakening of the pension system, as a result of an unfavourable demographic trend or a weak labour market, could probably be compensated by a higher return on the buffer funds' invested assets.

However, this ability to compensate for underlying weaknesses in the pension system is limited. In the first place, the size of the assets managed by the AP Funds limits the size of the potential return. Secondly, the possibility of adopting a higher level of risk, and thereby increasing possible returns, is limited. The number of major sources offering high returns is just not that great.

The employment situation will therefore have a much greater impact on future pensions than the result of the AP Funds' investment activities. The employment situation is in its turn dependent on the size of the labour force, as well as other factors, such as age of entry to the labour market and the age at which individuals choose to retire.

Status of Swedish pension system as per December 31<sup>st</sup> 2006, SEK bn (Source: Swedish Social Insurance Administration)

ASSETS		SEK bn
Contribution assets		5 945
Buffer funds		858
		6 803
LIABILITIES		SEK bn
Pension disbursements due		6 703
Surplus		100
		6 803

Small surplus in pension system

## *We aim for higher returns* – **AT THE RIGHT RISK**

*Mia Tegbrant and Camilla Jenedahl work in the Second AP Fund's Risk Management Department. This department has two main tasks. To ensure that the Fund's activities are properly managed, according to the rulebook. And to promote a higher return by conducting risk analyses of the Fund's portfolios based on capital market growth.*



“Our job is to aim for higher return – at the right risk. We have the support of a modern system that enables us to analyse risk in several dimensions, which was previously impossible. This is a tremendous benefit”, says Mia Tegbrant, who heads Risk Management at the Second AP Fund.

### Conscious choices – not inspired guesswork

Basically, risk management is about making sure the rules are followed and that investments are the result of conscious choices – not inspired guesswork. This ensures better long-term returns.

“It’s not about taking chances: it’s about taking calculated risks – about removing uncertainty,” says Mia Tegbrant.

The department numbers three professionals, all economics graduates, who share a keen interest in mathematics. Mia Tegbrant has previously worked in life assurance. As with the Second AP Fund, this previous position involved working with comprehensive systems based on computational models. This experience proved highly valuable when, in 2001, the department was assigned the task of building up a completely new system, at the then newly established Second

AP Fund.

“We have been able to choose the best right from the start,” notes Mia Tegbrant. “Many organizations are less fortunate, often finding themselves locked into large systems that make modification or replacement a complicated and/or expensive business.”

### Stable management – no fear of risk

This has ensured stable risk management at the Fund. The Fund’s auditors have confirmed this. Effective risk management is important to the security of the entire portfolio management operation.

“We are part of the Fund’s team, forming a reliable and stable back row. Occasionally, we make decisive passes, but we never score the goals”, says Mia Tegbrant.

This role includes standing up for one’s beliefs. To have the courage to speak out when clear risks arise. This places considerable demands on personal integrity, when new and partially unproven investment strategies and instruments are to be introduced.

“This is when you have to stand your ground and say: ‘Once we’ve assessed the new proposal, determined that we can manage the risk and confirmed that all signals are green – then we can

go!’ There’s a risk of being too keen to implement a new investment strategy and failing to conduct a sufficiently thorough analysis of the potential risks. This is something we have to do here”, says Mia Tegbrant.

### From ‘policeman’ to ‘consultant’

The risk management function has changed quite significantly in the past ten years. Ten years ago, risk management departments within the major fund managers primarily played the role of ‘risk police’. When risk managers appeared at meetings, armed with ring folders and Excel sheets, the portfolio managers knew restraints were about to be imposed, which inevitably implied reduced opportunities for higher returns. Expressions became gloomy.

“In those days, risk management was a fairly straightforward process, involving the application of a relatively limited number of financial ratios. Strictly a control function, not much more”, notes Mia Tegbrant.

Today, the situation is different, at least in many respects. The risk management function is still an independent department, tasked with monitoring and analysing the asset management process. However, risk management processes are

The Second AP Fund’s risk management department provides:

1.	2.	3.	4.	5.
Advice and support to the Fund’s executive management and portfolio managers concerning risk issues	Risk assessment of risk utilization and limits	Analysis of absolute risk and relative risk in the Second AP Fund’s portfolio of quoted assets	Stress tests and scenario analyses of the combined portfolio of quoted assets	Development of guidelines and models for improved management and monitoring of risk



now being integrated into the way portfolios are constructed. This creates excellent opportunities for analysing risks from several perspectives. Consequently, what were previously 'risk police' have now taken their place in the investment process as 'risk consultants' – still tasked with keeping an eye on the actual risks, but also with contributing to an increased return on assets under management.

"Nowadays, we are able to see the whole picture in quite another way. A single risk ratio can never provide the whole story. But by combining all these different factors and creating the right risk culture, we achieve better risk management", says Mia Tegbrant.

### **New investment philosophy establishes new attitude**

This development has occurred in parallel with the change process applied to the Fund's asset management organization as a whole. During 2007, the Fund completed its reorganization of portfolio management teams. Consequently, the teams are no longer organized by asset class. Portfolio managers and analysts now team up to collaborate on managing equities, bonds and FX. The teams have also been issued with a clearer requirement to generate pure alpha return, quite distinct from the strategic portfolio's market exposure.

Briefly, this means that the group invests in a limited number of asset classes that portfolio managers believe offer good prospects for high returns. This approach signifies a radical departure from traditional asset management conventions, where the manager invests across a broad spectrum, often close to index, resulting in a portfolio that reflects market growth. Strict alpha management minimizes the problem, since it involves the selection of fewer holdings, and only those that are expected to perform well. This naturally increases the likelihood of higher returns and lower risk. These alpha strategies are complemented in the Fund's overall portfolio by imple-

mentation of a more passive exposure of Fund capital, in line with the strategic allocation.

### **New system provides solid support**

The way in which portfolio management has been reorganized means that the traditional manner of working with risk analysis must be complemented with new risk ratios. At the start of 2007, the Fund implemented its new risk system. This risk system enables both historic and forward analysis and monitoring of the Fund's combined market risk. These risk calculations are based on Value at Risk (VaR). See box.

The system also permits advanced simulation to compute alternative risk outcomes using stress tests and scenario analyses.

Analysis of new alpha mandates is complemented by the VaR ratio. This provides a clearer illustration and understanding of changes in risk in the mandate, and how these contribute to the Fund's total risk. This new systematic risk analysis forms an important part of the Second AP Fund's strategy for adding value.

### **A better ratio says a lot**

The analysis of portfolio managers' expertise is based in part on the information ratio. Put simply, a good information ratio means that the portfolio manager's investments have performed well in relation to the accepted degree of active risk.

"We produce regular reports for the Fund's executive management and portfolio managers. These provide immediate notice if problems are developing or have already occurred. Then the system signals yellow or red. Otherwise, everything is green."

"This system permits more complex analyses. Everything becomes much clearer. For instance, the degree to which portfolio managers succeed becomes very apparent. This enables us to contribute to a higher return", says Mia Tegbrant.

## What's VaR?

Many different statistical ratios are available for determining levels of risk in portfolios of financial instruments. Let's take a closer look at the Value at Risk (VaR) ratio, which in principle determines the amount of money you might be expected to lose over a specific period of time.

VaR can be calculated using a variety of formulas. Probably the simplest is based on the port-

folio's historical fluctuations, known as volatility, integrating the results into a formula that combines market value, calculated investment period and confidence interval. Once everything is in place, the formula can generate a figure for the potential value at risk: such as SEK 4 million for a portfolio with a market value of SEK 300 million.

Assume we have used a confi-

dence interval of 95 percent and a period of one day. This means that there is a 95-percent likelihood that the portfolio, during a single day of normal trading, will lose no more than SEK 4 million in market value.

Inversely, this means that the Fund runs a 5-percent risk of having the value of its portfolio decline by more than SEK 4 million during the same day.



## Looking for the right risk



*“Our priority is not always the lowest risk – we are looking for the right risk. What is important is that the degree of risk accepted is calculated in advance and monitored afterwards”, states Mia Tegbrant.*

Risk can be defined in many ways. Ask a research scientist and you’ll get one answer. Ask a military strategist and you’ll get another. Ask a business economist and you’ll get a third. If you also decide to ask a financial analyst, you’ll probably get a fourth answer. All are probably equally correct, from an individual perspective.

In this context, it is relevant to take a closer look at the nature of financial risk, since the Second AP Fund operates on financial markets. Expressed in the simplest terms, financial risk management is largely about calculating the most probable future result. These calculations are supported by historical data and informed assumptions about future trends.

However, risk management is also about taking decisions, based on calculations – about spreading risk to avoid “placing all our eggs in the same basket”, yet retaining the highest possible risk-adjusted return.

### Complex system of simultaneous risk analyses

In a large Fund like the Second AP Fund, with many different asset classes, it is particularly important to ensure that not just the most obvious factors are analysed when selecting investment options.

“Analysing our Fund is a highly complex process, when seen as a whole. No single financial ratio is capable of providing a comprehensive answer. Instead, we are forced to work simultaneously with several models, while keeping an eye on the system to see whether it’s flashing red or yellow somewhere. This means we can act fast”, says Mia Tegbrant, who heads the Second AP Fund’s risk management function.

It started in

19  
21

–that we  
know for sure

The English political economist Frank Knight was the first to define the difference between calculated and uncertain risk. His intellectual dissection of the concept of risk, presented in a 1921 publication entitled “Risk, Uncertainty and Profit”, as well as elsewhere, signalled the true beginning of structured risk management as now practised by countless organizations, including the Second AP Fund.

What he appreciated was the importance of distinguishing between uncertainty and risk. If the risks are measurable, such measurements can help define probabilities, which in turn enables the adoption of a calculated risk. If the risks are not quantitative, and can therefore not be measured, the possibility of taking calculated risks vanishes. This creates uncertainty, which makes it difficult to make decisions of an economic nature.



Frank Knight, 1885-1972

# Stress tests



## Extreme preparations for extreme situations

*Stress tests and scenario analyses. These are two of the instruments the Second AP Fund utilizes to gain insight into the impact a new investment 'bubble', oil crisis or September 11th-type terrorist attack might have on portfolio returns.*

The Second AP Fund's risk management department has a dual role. On the one hand, it acts as a control function, which in principle means making sure that everything operates smoothly. The other role is risk analysis.

"Nowadays, about 70 percent of our time is devoted to analysis and 30 percent to control. That's not the way it used to be. We spent more time on control. Now it's in place and rolling. This means we can free up further resources to analyse what the future may hold", says Mia Tegbrant.

### Advanced stress tests

Conducting forecasts or 'scenario analyses' is difficult, for the simple reason that so many uncertain factors are involved.

"Even so, these forecasts are based on a firm foundation, in the form of our analytical and risk attribution system, which allows us to determine precisely where risks may arise", says Mia Tegbrant.

"And we also have our stress tests. Not many carry out such complex calculations."

### Interacting factors and sensitivity

Stress tests enable the Fund to identify potential financial risks that can arise as the result of extreme events. Practically, this means that the impact of an event, which may be historical or hypothetical, can be applied to an existing portfolio. This is done to gain insight into how the portfolio responds to different types of event – what interacting factors are involved and the sensitivity of the portfolio's response.

"The result of these tests is presented in both kronor and percent. It is important to talk in kronor. Percentages can be so abstract."

Some of the historically extreme market fluctuations of recent years that may be applied to the portfolio are: the Russian devaluation of 1998, the Brazilian crisis of 1999, September 11th 2001 and, of course, the IT bubble.

"2002 was a very special year on world stock markets, due to the downmarket and the dramatic fluctuations that we term 'volatility'. It's a year we have utilized a lot in our tests."

"2007 is also special. The markets were subject to dramatic swings. I'm sure it will be one of the years selected for use in stress tests in future", says Mia Tegbrant.



Hubert Michael Boesl/EPA/Scampix



## How a stress test works...

1

Through its risk system, the Fund has access to historical data from international finance markets and other key indicators, such as energy prices and financial ratios linked to national economic development.

2

This makes it possible to determine how different indicators – such as the price of oil, currencies and equities – interact.

3

The Second AP Fund then decides the type of scenario to be tested. For instance: what impact might an oil crisis have on the current portfolio?

4

Based on the accumulated historical data concerning the impact of previous oil crises on financial ratios, the figures relating to 'oil crisis' can be applied to the current portfolio.

5

When the model has been fully processed with the available data, the result is presented in the form of suppositions as to how the Fund's size and structure is likely to be affected if subjected to an extreme event, such as an oil crisis.

6

This decision data is then analysed by the Fund, yielding a better understanding of the portfolio's behaviour.

## A brief history of risk management...

### ...in the finance industry

Risk management first entered the finance industry as an academic discipline in the 1980s. It occurred when new financial instruments, such as options, started to become increasingly popular.

It was not until the 1990s, however, that risk management acquired the status of a true profession in the world of finance. This was mainly attributable to the introduction of computers, which enabled the storage and analysis of large volumes of data.

Stress tests and scenario analyses form an important part of the risk management process in the finance industry. They date from the days of the Cold War, when the superpowers invested considerable time and effort in attempts to predict probable activities and their possible effects. This analytical approach was adopted by the insurance industry during the 1970s, to anticipate potential disasters – such as oil spills.

The growing maturity of the finance industry and the increasing power of computers meant that the industry also started to apply these methods during the 1980s and 1990s.



## MY TASK: “To stay on top of the action”

**The Second AP Fund manages and utilizes a whole range of financial instruments to secure the required levels of exposure and return. The work of Lars Lindblom and his colleagues in Business Control concentrates on effective follow-up and processing.**



The Business Control department manages the Second AP Fund's commercial processing of securities and derivatives. Comprising a staff of four, with clearly defined specialist roles, the department handles several asset classes, as well as listed and unlisted holdings. The department has played a significant role in establishing and designing the systems employed for control and follow-up.

“In an organization of this type, it is important to have stable systems and routines that are also flexible – especially when implementing new strategies and investment alternatives”, says Lars Lindblom.

The work of the Business Control department has even gained acclaim outside the Fund's own walls, including a favourable rating in an image survey conducted among industry staff, in the summer of 2007.

“It's very pleasing, because we strive constantly to think innovatively, to develop solutions that promote an optimal balance between control, efficiency and flexibility”, says Lars Lindblom.

### **Right from the start**

Lars Lindblom was there right from the start, in 2001. The aim was to create an internal function, based on robust and efficient routines, which would give the Fund the ability to rapidly realign its portfolio management activities with new strategies. The goal was to ensure

that external and in-house portfolio management would be subject to the same high control standards. The selection of the TradeSec communication system has played a key role in this respect. It is used to access data, in real time, on all trades conducted by external managers. This has made it easier to rapidly change external managers or recover capital for management in-house.

well as in-house managers. This demands an effective infrastructure. Development has focused primarily on automating as many of the trade-related processes as possible, partly to reduce the operational risks and partly to free-up more time for analysis, evaluation and innovation.

“We have developed efficient solutions and routines for the effective management of large

have been jointly involved in building up the Fund's asset management system. Consequently, the system is highly user friendly.

Being right in the middle of things offers excellent insight into the asset management process and an opportunity to implement the experience and expertise gained by developing more efficient routines and processes for the organization as a whole.

“This benefits everyone, in particular the portfolio managers, by ensuring faster and better control, both of large flows and individual trades. Our ultimate goal is to contribute to a better return on assets under management, so it feels good that we've come so far already,” says Lars Lindblom.

### **Five areas of responsibility:**

- **Global business administration**
- **Control and follow-up**
- **Flow analysis**
- **Corporate actions**
- **Systems infrastructure**

### **Automation – one of the keys to success**

Business Control is engaged in the ongoing follow-up and analysis of trading flows. Among other things, the department follows up trading costs with respect to commission and trade impact. This is an established method for gauging the effectiveness of the trades executed both by portfolio managers and brokers.

The Fund's portfolio embraces several asset classes, listed and unlisted, managed by external as

business volumes. The way the system is structured allows rapid and efficient implementation of major changes in portfolio and strategies, while retaining good control throughout the process,” says Lars Lindblom.

### **Contributes to the result**

At the Second AP Fund, Business Control is integrated with portfolio management. Not just because the group sits with the portfolio managers and maintains an ongoing dialogue, but because they

# Counting on solid returns



*International studies show that quantitative management is an expanding discipline. There are three reasons for this development: the possibility of lower costs, higher returns and lower risk. The fact that the Second AP Fund is one of the pioneers in the international arena means that many are counting on solid returns.*

Considered from an international viewpoint, the Second AP Fund's model for quantitative management is one of the leading models among institutions of a similar nature. Developed in-house and highly automated, these strategies help keep costs down when, for instance, compared to index-based management services purchased from external portfolio managers. Furthermore, the Fund's quantitative strategies team, with a staff of seven, adds greater flexibility to its asset management activities as a whole, as when moving positions between regions. Quantitative strategies are not only cost efficient and yield a solid return at low risk, they also create a broader recruitment base.

"Here we need both financial know-how and solid mathematical skills. Our excellent collaboration with Chalmers University of Technology and Göteborg University means that we are strong in both respects," says Tomas Morsing, who heads

Quantitative Strategies at the Second AP Fund.

## **Can be tested historically and transferred across borders**

One advantage of these quantitative investment strategies is that they can be tested historically in the Fund's own "finance lab". They are also transferable between markets. At year-end 2007, the Fund's quantitative management activities were organized into five regions: Sweden, Europe, the USA, Japan and industrialized countries in Asia. Until the close of 2006, quantitative management had only been applied to the Fund's portfolio of equities. In 2007, this was extended to include fixed income securities.

## **Quantitative management at two levels**

The Second AP Fund's quantitative strategies have two aims: to assure efficient implementation of the strategic portfolio and to

generate an active return on invested assets.

Implementation of the strategic portfolio is based on models that incorporate risk and transaction costs, and that attempt to replicate the selected indices. Expressed simply, the goal is to achieve value growth in parity with the benchmark index – but at a lower cost than management against index by an external manager.

In the case of active or ‘alpha’ management, the portfolio is expected to outperform its benchmark index.

## Takeover of capital assets from ‘traditional’ portfolio management

Quantitative management plays an important role in the Fund’s new strategy and has taken over the index-based management of assets previously handled by the ‘traditional’ fund managers. This was implemented in conjunction with the 2006/2007 reorganization, when management of alpha and beta strategies was separated.

## Quantitative management in brief

Quantitative management utilizes mathematical models to process large volumes of data. The models rely on statistical data to reveal patterns that permit the prediction of price inefficiencies relating to financial assets such as equities, fixed income securities and foreign exchange.

Decisions concerning the purchase or sale of assets are determined according to the results indicated by the mathematical models. The high degree of automation yields cost efficiencies while also offering excellent prospects of a high return and low risk.

Previously, fund managers handled large portfolios, which involved keeping track of multiple occurrences of a strictly administrative nature, such as dividends and index adjustments. While enmeshed in all these administrative responsibilities, portfolio managers were expected to come up with creative investment strategies – not easy.

The new structure allows alpha portfolio managers to focus on the active positions that are expected to generate added value.

“This is much more effective, because our systems are more cost efficient for managing portfolios against index. At the same time, it gives our traditional portfolio managers a good chance of outperforming benchmark, since it allows them to focus on what they are best at – fundamental analysis,” says Tomas Morsing.

## Quantitative alpha management also successful

In the past few years, quantitative strategies have generated results that have outperformed their benchmark indices.

The active alpha strategies applied in quantitative management are based on statistically reliable patterns common to national economies and individual corporations. Even other themes, that involve trends and market psychology – such as the way analysts behave – can be addressed.

“Basically, we can utilize any theme at all, as long as it is quantifiable. This is what makes quantitative management so exciting.”

“At the same time, we must remember that we have used quantitative management for only a few years. It is important that we spread the risks between different management strategies, even in the case of alpha. Which is why there is also a need for active portfolio management based on fundamental strategies, ensuring that we complement each other,” says Tomas Morsing.

## A decade of data

Quantitative alpha strategies are based on discovering systematic price inefficiencies in financial assets. The Second AP Fund has compiled a decade of data in its search for indicative factors that can help locate such imperfections.

*Examples of indicators being tested in the Fund’s finance lab involve data that can be derived from:*

- Annual financial statements
- Estimates
- Prices
- Trading by persons with insider knowledge
- Acquisitions and mergers
- Macro economic trends



# The smart don't speculate



*It's smart to speculate. At least, that's the impression the experts give when they express their opinions on TV. But even if the Second AP Fund's Quantitative Strategies department has plenty of mathematical whizz kids, few would agree that they 'speculate'. Here, not a single investment decision is taken until comprehensive mathematical calculations have been completed.*

At first sight, quantitative management appears something of an anomaly in the world of finance. When first confronted by the 'quantitative management' concept, it is easy to gain the impression that success must depend on exceptional mathematical skills.

"Yes, you do have to be good at maths. But it's more than that. Probably the most crucial qualifications are a keen interest in understanding how different factors interact and a determination to address and resolve problems in innovative ways. You need a bit of entrepreneurial flair to succeed at this," says Tomas Morsing, who heads the Fund's Quantitative Strategies department,

which has a staff of seven.

Also striking is the impression that you don't have to be an expert on every type of equity to succeed as a quantitative strategist.

"This is partly true. What is required is a broad interest in and understanding of capital markets, an ability to identify connections and come up with viable new investment concepts", says Tomas Morsing, whose background includes a research degree in mathematical statistics.

## Experience from the pharmaceuticals industry

He previously worked at AstraZeneca's research and development department,

where he built up a group engaged in genomic and bioinformatic research.

This is what is referred to as 'discovery research', which comprises the initial stages of the development and eventual launch of a new pharmaceutical.

The pharmaceutical industry's preferred working method – developing hypotheses for subsequent verification or rejection based on statistical calculations – is reminiscent of the approach adopted by the Second AP Fund's finance lab.

"The pharmaceutical industry's development approach, requiring the development of hypotheses which are then tested to determine their validity, supported by huge quantities of data,

offers a mathematician tremendous development opportunities. This has been of considerable benefit in my work at the Fund,” says Tomas Morsing.

He started at the Second AP Fund in autumn 2002. His first assignment was to establish a risk budgeting department, to manage risk allocation between the Fund’s different asset classes. Quantitative management was not implemented for another two years.

## Establishing quantitative management is a major task

Building up a department for quantitative analysis and management is a demanding business, both in terms of man-hours and IT resources.

“We gained a lot of useful experience while working with our ALM (Asset & Liability Management) model, employed in forecasting asset and/or liability growth in the national pension system. It was developed in collaboration with research scientists at the Fraunhofer Chalmers Research Center for Industrial

Mathematics,” says Tomas Morsing.

And it wasn’t just the mathematical modelling process that yielded useful experience in establishing the quantitative management system. The experience gained when selecting an appropriate IT system was also invaluable.

## Entrepreneurial flair promotes innovative solutions

Initially, immediately following its completion, the system intended to compute the data required for an ALM study was slow. With the computing power available at the time, it took 36 hours to conduct an analysis.

“This simply wasn’t good enough. By introducing our own improvements, we are now able to conduct ten analyses in the same time it took to conduct a single analysis before. And the system is more robust.”

The demand for computing power is also considerable in the quantitative management field. We are talking about thousands of shares and millions of data

points that need to be subjected to several types of analysis.

“Here we have benefited from what we learned in working on the ALM project. You have to have a touch of the entrepreneur to conduct this type of asset management. If problems arise, you have to solve them. I believe this is something we mathematicians are good at.”

“Our creative ability lies in the models. I feel that our background means we take nothing for granted. This means that we can find new ways to solve problems, not only when it comes to developing hypotheses but when designing an asset management system as well”, says Tomas Morsing.

# STEP BY STEP

## From concept to implementation

*The Second AP Fund’s finance laboratory is engaged in an ongoing development process, focused on developing statistically reliable investment concepts. This is a time-consuming process. Generally speaking, it takes several months between the time a concept is mooted and its actual implementation as part of the Fund’s regular investment activities – assuming its approval, of course. The most important steps along the way from initial concept to actual implementation are shown here.*

1. The first step is to develop a hypothesis, such as “equities with a low P/E ratio perform better than those with a high P/E ratio over the long term”. This is the only part of the process where there is room for ‘human’ analysis. The rest of the process is strictly regulated. There are basically three sources from which new investment hypotheses may be derived: academic reports, international conferences and one’s own ideas. “One’s own ideas are always best, because you’re alone. With an academic report, or a speaker at a conference who points to an investment opportunity created by a market inefficiency, this type of arbitrage disappears”, says Tomas Morsing, who heads Quantitative Strategies at the Second AP Fund.
2. Once the hypothesis has been formulated, it is tested at the lab, with access to more than a decade of data.
3. If the hypothesis is viable, and systematically recurrent price inefficiency is determined, which is statistically reliable, it is approved as an investment strategy.
4. The investment strategy is then inserted into a management model and implemented in compliance with well-defined and predetermined rules.

# MY TASK: “To put money to work”

At the Second AP Fund there's no rest. Not for money, anyway. This is to Anders Sköldberg's credit.

One of his most important tasks, namely, is to identify money that is 'lying dormant' in the Fund's account, and to put it to work for a good profit until the portfolio managers need it.



Anders Sköldberg's business card states his title as Manager F/X. This means, for example, that his job is to ensure that the right amount of the right currency is always available for the portfolio managers in the Global Alpha team, when they want to buy shares or bonds on international markets.

"Currencies are important. A share gain can rapidly be wiped out by a decline in the value of the currency. We try to avoid ending up in this position. This gives the Fund good stability," says Anders Sköldberg.

But Anders Sköldberg has another title too: Manager Cash Management. Possibly his most crucial task is to locate money that is lying dormant and to put it to work, until the portfolio managers need it.

## Always money in the account

This is the way it works. The portfolio manager has a specific mandate, which in principle refers to the sum of money with which he or she is authorized to purchase shares or bonds. And this applies to a specific market. For the portfolio managers in the Swedish Alpha team, this means Sweden. Those on the Global Alpha team trade on one of the international markets.

The money to be invested is first transferred to an account, from which the portfolio managers can then withdraw funds when the time comes to buy. The system comprises a total of 600 accounts.

In some cases, when the portfolio manager is waiting to select a better moment to buy, he/she can retain part of the portfolio in cash,

which means that the money can be deposited in the account for brief periods. And even after portfolio managers have made their investments, surplus cash – termed liquidity – is left in the account.

## Always after a higher return

Irrespective of whether the portfolio manager plans to leave the money in the account only briefly, or for a longer period, Anders Sköldberg has to secure the best possible rate of interest.

Like a detective, he monitors the system's reports and indicators to get wind of accounts where money is lying dormant. Dormant, in this context, means that the Fund is earning no more than the bank rate on the deposit.

"This feels bad, because I know that the banks are using the money lying there. They lend it to others, and make a healthy profit from it.

With this in mind, we negotiate regularly with the banks, to ensure that we earn considerably more than would be granted in a standard contract," says Anders Sköldberg.

But he doesn't stop there. His job is to get out there and look for other, short-term investment opportunities, that will yield a higher return – and that can be speedily realized if the portfolio managers need the money.

## Three months – the ultimate limit

Anders Sköldberg can place the money for up to three months. His mandate extends no further.

"Usually we're talking about much briefer periods. On average, from a day to a couple of weeks."

When Anders Sköldberg is look-

ing for investment alternatives, he checks the established rates first. One such is STIBOR, which is basically the rate that Swedish banks pay when they borrow from each other. Another example is LIBOR, which is the corresponding rate on the European market.

"If any of these offer a higher return, it can result in a placement. Otherwise, I look at the other options available to us. These include certificate programmes and repo rates (repurchase agreements). We have good relations with our banks. They know they need to meet our expectations and come up with good investment

alternatives. If not, we choose someone else."

On a 'normal' day, Anders Sköldberg makes placements in a variety of currencies to a combined value of SEK 10-15 billion. During certain periods, this can rise to more than SEK 30 billion. The sheer size of the amounts means that every thousandth of a percent in extra return is important.

"To be good at this, you need a certain amount of experience and a competitive instinct. I have worked in this field for many years now, and I still get a kick out of being able to look back at the end of the day, after a successful placement."

## 'Liquidity' – a multifaceted word

Liquidity is a word that can mean different things in different contexts.

### Meaning 1

When talking about companies or funds, liquidity often refers to the amount of liquid assets available: in other words, how much money is placed in deposit accounts and available for investment.

### Meaning 2

In stock market terms, the liquidity of a specific share or bond refers to the trading volume. High liquidity means that there are large numbers of buyers and sellers trading with each other. Low liquidity means the opposite: few buyers and sellers and a low trading volume.

Assets with low liquidity involve an extra risk, because one can never be sure there will be enough buyers or sellers when it's time to trade.

### Both meanings are important to the Second AP Fund

The Fund invests the liquid funds (meaning 1) available in its accounts in liquid assets (meaning 2), such as treasury bills. Selecting treasury bills means the Fund can speedily sell the asset and realize the money again, which can be used by portfolio managers when they identify an attractive investment opportunity.

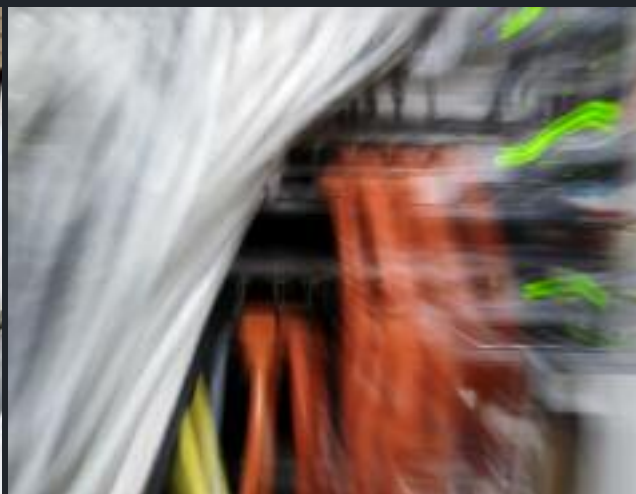


THEME: IT

# BUSINESS INTELLIGENCE & DATA WAREHOUSE

– always an up-to-date report in stock

*Enhanced operating efficiency – and the right information to the right person at the right time. These are some of the benefits of the Second AP Fund's data warehouse and decision support systems. The system, which is unique in the industry, ensures that an up-to-date report is always close to hand, no more than a few keystrokes away.*



But it is not so much the reports that are new, as what ensures that the reports are generated – and in a reliable way. We are here referring to Data Warehouse and Business Intelligence – trade terms used in the IT industry. This is where data from a number of different sources is stored and from which users, whether portfolio managers, traders or administrative personnel, can retrieve information almost instantly, when compiling a report.

“When fully developed, this system will place us at the cutting edge of technology in the finance industry,” says Christian Salomonsson, systems and project manager for Data Warehouse.

#### **Previously, systems were spread out**

The idea of a Data Warehouse emerged in conjunction with a survey to chart flows, connections and processes in the Fund's IT environment, in the spring of 2006.

“We noticed there were several specially designed solutions. They worked, but they demanded a lot of manual problem solving, which required considerable IT support and interrupted day-to-day operations,” says Björn Iveland, who heads user sup-

port and is also involved in systems operation at the Fund.

“The way the system was conceived at the time involved a number of risks. These were partly day-to-day and operational risks, but also risks arising from our dependence on a few key people,” says Gunilla Engelbrektsson, head of IT at the Second AP Fund.

#### **Sought a holistic approach**

The discoveries made in conjunction with the survey strengthened the IT group's determination to start sketching a new systems approach. Both their own requirements and the demands implicit in Fund operations were clear. The new solution should provide a robust basis for analysis and decision data, based on a holistic perspective. Both the data generated and the analytical tools provided should feature the sort of automated quality assurance that had not previously been feasible.

#### **At the finance industry's cutting edge**

The sketching led to a new system design, featuring a data warehouse and a joint analytical platform. The data warehouse

provides an umbrella for all underlying systems.

“When our system is completed, down to the very last detail, I believe many will be keen to come here to take a look at it,” says Christian Salomonsson.

### Prospects for a better return

In short, the system offers two types of benefit: increased operational reliability – from a strict IT viewpoint – and better information, to the right person at the right time, to use the jargon of “information logistics”.

This fits well with the Second AP

capable of exploring new relationships in financial markets offers quantitative strategists a clear competitive edge. The goal is to locate patterns that expose market inefficiencies – something that the Fund can exploit in its portfolio management strategies, to generate a higher return.

“The Quantitative Strategies team is demanding, in the best possible way. They want to test new investment hypotheses all the time in their ‘finance lab’. This system offers them the ability to get their own analytical models (which are often complex) up and running in the shortest possible time,”

“The data warehouse features inbuilt intelligence that, for example, allows you to set lower and upper risk limits. It blinks yellow if the portfolio manager is approaching the limit and red if exceeded.” See box below.

This means the Risk Management department can focus more on preventive measures, instead of following up and conducting checks on what has already occurred.

### The first step was taken in Risk Management

The fact is that the first step towards



Fund’s ambition: to have a significant portion of the portfolio under in-house management.

“Yes. Because portfolio managers will be able to make better investment decisions, thanks to speedier access to the information, combined with broader range and higher quality. This enables us to contribute to better portfolio management,” says Gunilla Engelbrektsson.

### Demanding organization powers development

Consider the group that handles quantitative management at the Second AP Fund, for example. Its portfolio management activities depend on the ability to rapidly process huge quantities of data, from a number of different data sources. Building in-house models that are

says Christian Salomonsson.

### Automatic intelligence in stock

The system is also welcome from a risk management point of view. In principle, any control function can be built into the system. Once installed, follow-up and control is largely automatic, or at most requires a few clicks of the computer.

today’s data warehouse was taken in the Risk Management department. The first sub-project involved an overall solution for managing information and report functions for forward risk. Another solution was in place at the time, based on an access database.

“It worked, but the reports were rather ‘flat’ and it demanded a whole

#### Quick review of Fund’s risk limits, example

Underlying PV SEK Portfolio	Volatility Portfolio	ETE Limit Ratio
3 424 071 301	7.56	0.15 ●
4 613 469 916	6.35	0.33 ●
21 155 122 915	6.64	0.10 ●

## Seven benefits of the Second AP Fund's data warehouse

- **"All-in-one" solution:** Efficient consolidation of information from several different sources provides the decision maker with a rapid overview.
- **"Quality assured":** Quality assured information, since all sources of input data must be approved before they are linked to the data warehouse.
- **"Self administrating":** Automation reduces the need for manual routines.
- **"Protected source":** For example, reduced loading of the asset management system, which previously was placed under considerable strain, when many users and other systems accessed information simultaneously.
- **"Quick and simple":** An integrated platform with a common interface for analysis and reporting, for increased accessibility and user friendliness.
- **"Reliable operation":** Robust systems based on standardized products reduce the support requirement and dependence on key individuals.
- **"Increased freedom of choice":** Offers greater flexibility when preparing reports and conducting analyses.

series of manual inputs, which was not only time-consuming, but which also added to the risk of error further down the line," says Christian Salomonsson.

### The new system – from a portfolio management viewpoint

Thanks to the data warehouse, analysts, portfolio managers and decision makers can build their own unique report models, in a system that is robust and flexible at one and the same time. If an analyst, for example, wants to produce a report that shows return, cost, historical data and risk, the plan is that he/she should build his/her own model, rapidly and simply. Add the fact that the information is quality assured, as the sources have to be approved according to a pre-determined process, in the form of the information management logic.

"Earlier, users had to access several different systems and retrieve the information manually. The new system saves time and can be used more effectively. It also enables figures to be compared in a way and with a level of reliability that was not previously possible," says Gunilla Engelbrektsson.

"There is a further benefit, too. Everyone now uses the same interface, with the same decision-support portal. This promotes greater transparency between different functions here at the Fund."

### Started from scratch – a key factor

Given all the benefits, it's tempting to ask why more Fund managers don't have this type of system.

"The fact that the Second AP Fund is a relatively young organization has been an advantage in this respect. It

meant that we could start from scratch and build a system best suited to our future needs," says Gunilla Engelbrektsson, who was one of the first 'on site' when the Fund started to build up its portfolio management operation in 2001.

"It takes quite a long time to develop a data warehouse. It's not the logic that's challenging, as this is of course already integral to operations. The art is in transforming what you want to achieve into a technically viable and user-friendly process. The pace of change in the finance industry is high, and new challenges arise constantly. Our goal is to have the system fully completed by 2010," says Christian Salomonsson.

## THIS IS HOW DATA WAREHOUSE WORKS

- **Technically speaking, the systems solution comprises two distinct parts: the "data warehouse", which is a database, and a report and decision-support platform, in the form of a web portal.**
- **The system's design is flexible, as well as robust. Considerable emphasis has been placed on automated quality assurance and fault management. The system is built to accommodate change without fuss, and to be responsive to new demands arising from the Fund's day-to-day operations.**
- **In the new system, each individual system is linked to the common data warehouse, from which every type of information may be retrieved any time at all, via the portal.**

With the new system, generating customized reports is simple.





## MY TASK: “Short-term trading”

Anders Lekholm's job differs from most others at the Second AP Fund. He's paid for his short-term view.

The reason can be found in his job description. He's an expert in equity trading. And there's no doubt that he's succeeded at the task.



When the alarm clock rings at 6.30 am, his cellphone is already fully updated with the latest financial news. In the car on the way to work, he listens to the messages on his voice mail. These may include updates on overnight movements in markets in the US and Asia, as well as corporate research from the Fund's stockbroker contacts. Anders Lekholm is therefore well briefed by the time he enters the Second AP Fund's trading room, ready to embark on another day of trading the Fund's equity flows.

All trades are normally completed during the same day. Some days, only a minor number of different equities may be bought or sold. On other days, it might be entire portfolios or several hundreds of different share positions that have to be rebalanced.

“At times, it can get really hectic, especially during the report season. But we have good systems, that make the job easier. It makes the process reliable and stable, so that we can concentrate on making good trades”, says Anders Lekholm, who works with the Swedish Alpha team, which is engaged in active management of Swedish equities and fixed income securities.

### Over the long term, every day counts

When the working day is over, all trades are reported in the Fund's administrative system, and Anders Lekholm also analyses the day's trading result. Plus or minus, depending on whether he has outperformed or underperformed

against the benchmark.

In a Fund that utilizes analytical models that commonly feature a 5-to-10-year horizon, one day's trading may seem fairly insignificant.

“But it's the many individual days that eventually add up to long periods of time and an overall result. If you think like this, every day is important,” says Anders Lekholm.

### Long-term effects – that's why we need trading expertise

A 'trader' is expert at buying and selling financial assets. These include equities, currencies, bonds and various index futures.

Most large institutions and asset management organizations have trading experts on their staffs. This is because experts are needed who can implement individual buy and

sell orders in the most efficient way possible, as well as portfolio managers with a long-term mandate. Otherwise, there is a risk that the Fund will lose money through a lack of expertise in determining the optimum moment for a trade – which could have a negative impact on the long-term return on assets under management.

sell orders in the most efficient way possible, as well as portfolio managers with a long-term mandate. Otherwise, there is a risk that the Fund will lose money through a lack of expertise in determining the optimum moment for a trade – which could have a negative impact on the long-term return on assets under management.

Otherwise, you may impact the share price too much, or may not be able to locate any shares at all. The logic is fairly straightforward.

### Long experience yields good results

Anders Lekholm has been engaged in equity trading for eleven years now. Although it's actually probably even longer.

“I started investing in the stock market fairly early. It was this interest that resulted in studying economics and finance.” Some of these studies were in Chicago. Parallel with his studies, he worked at Merrill Lynch and Chicago's

Mercantile Exchange, which is the largest commodities exchange in the world.

“I learned many useful lessons there, which have proved useful in my previous positions as a trader, at Bear Stearns in Los Angeles as well as here at the Second AP Fund.”

### 'Soft' as well as 'hard' factors

Anders Lekholm uses some twenty indicators that he monitors daily. These include various indices, oil prices, forward prices, graphs, currencies and interest rates.

“The most important indicator is the price mechanism. After studying the price activity of a specific equity, you acquire an understanding of how the other players are positioned and how they are likely to act.”

“Even so, probably just as many 'soft' factors are involved, where intuition determines your final decision.”

Something about a broker's tone of voice can be enough to persuade Anders to consider a different course of action. Knowledge of human nature is an important quality in this profession, an ability to interpret and recognize patterns from a few words, a tone of voice or way of behaving.

“Equity trading and the way the stock market behaves has a lot to do with human psychology. To be successful in the short term, you have to understand how others are going to interpret new data and strive to constantly predict how other investors are going to act”, says Anders Lekholm.



## *Patience and selectivity are the keys to success*

*The market for funds of unlisted holdings is big. Worldwide, there are more than 3 000 funds to choose from. Studies show that just a small proportion of the top funds account for a predominant share of the return generated. This means it is important to choose right.*

As of the last second of December 31st 2007, the Second AP Fund had SEK 3.4 billion invested in 26 Private Equity funds. The return on investment was good: 5.5 percent for the full year 2007.

For those used to skimming through the business pages, it must seem that the market worth of all the funds with unlisted holdings, often referred to as private equity funds, has risen like a rocket. Not so. Studies show that far from all of them have succeeded in creating really high returns.

According to investment bank Goldman Sachs, the average return generated by funds focused on unlisted holdings has been good. But we can thank the best 25 percent for this. They demonstrate a clearly superior return over time compared with the majority of funds, which actually generate rather mediocre returns when matched with investors' expectations.

"There are a fair number of fund managers who are not that good. They may well be good analysts. But dealing with unlisted holdings is about working with corporate development, which is a very different matter. It demands experience,

expertise and, last but not least, a nose for business," says Anders Strömblad, who heads Alternative Investments at the Second AP Fund.

### **Systematic footwork**

In other words, it's important to screen out the best funds or, more correctly, the best investment team. The Second AP Fund uses an in-house model for this process, which relies on analytical skill, patience and time. And many days of travel.

"It adds up to a lot of days travelling a year. Usually to the major finance centres in the USA and Europe."

These trips are to meet funds in which the Second AP Fund has already invested, and to meet those that might be of interest.

"When I'm visiting a new fund, I make sure I get the chance to wander round and get a feel for the atmosphere. I talk to everyone within the investment organization, one after the other. We conduct extremely thorough studies of the funds in which we plan to invest. When conducting such studies, video conferencing, phone calls and e-mail just aren't enough,"

says Anders Strömblad.

### Long gap between first meeting and investment

The need for thoroughness can mean a gap of several years between initial interest in a fund and actual investment.

"This summer, we invested in a fund I first came into contact with in 2001. We must assure ourselves that a fund performs well over extended periods of time. And we must fully understand its processes. Unless we're fully convinced of the abilities of the fund's staff, we

process, so that 'only' 70 were left. These met Anders Strömblad and his colleagues. After a second screening process, 20 funds remained.

"We arrange to meet these funds several times. We conduct a thorough analysis of each fund based on a long checklist. This stage also includes an initial review of the contract proposal."

### Nine new investments in 2007

"If we wish to continue, the contract is subjected to further review and we engage in straightforward negotiation."

over many years. In 2007, this led to investments in nine funds," says Anders Strömblad.

### World first with the UN's Global Compact

The Second AP Fund, thanks to Anders Strömblad and his colleagues, has become a well respected investor in private equity funds around the globe. One reason is the Fund's commitment to ethics and the environment. The Second AP Fund has long noted that, generally speaking, funds for unlisted holdings have adopted a passive stance concerning ethical and environmental issues in their portfolio companies. There has also been some scepticism about the motives of fund managers – that they ignore sound ethics and environment responsibility in favour of a high return. These issues are taken very seriously by the Second AP Fund, however, especially when assessing long-term value, something that is described in more detail in the Second AP Fund's Corporate Governance Report.

"As far as I am aware, we are the first investor in the world to demand that funds we invest in comply with the principles outlined in the UN's Global Compact," says Anders Strömblad.

These are ten principles that cover areas such as human rights, labour rights, the environment and corruption.

*"We are proud to have the Second Swedish National Pension Fund as one of our significant Limited Partners. AP2 is a valued partner of Carlyle."*

*We have been particularly impressed by the long-term and disciplined approach of AP2's investment team, and its close on-going oversight of our funds' investment activities. We look forward to being a significant manager of alternative investments for AP2 going forward."*

David M. Rubenstein, Managing Director and Co-Founder, The Carlyle Group

don't invest. This can of course mean that we miss the occasional fund that performs well, because we're relatively conservative. But it's something we take into account."

The investment opportunities are legion. There are more than 3 000 funds offering investment in unlisted holdings. In recent years, some 500 new funds have been established – every year.

"I receive an investment proposal every day. A lot of this job is about knowing what to ignore, so that you're left with the golden nuggets – which are almost exclusively funds we have contacted proactively and about which we already know a lot. The investment proposals that arrive by mail are seldom of interest," says Anders Strömblad.

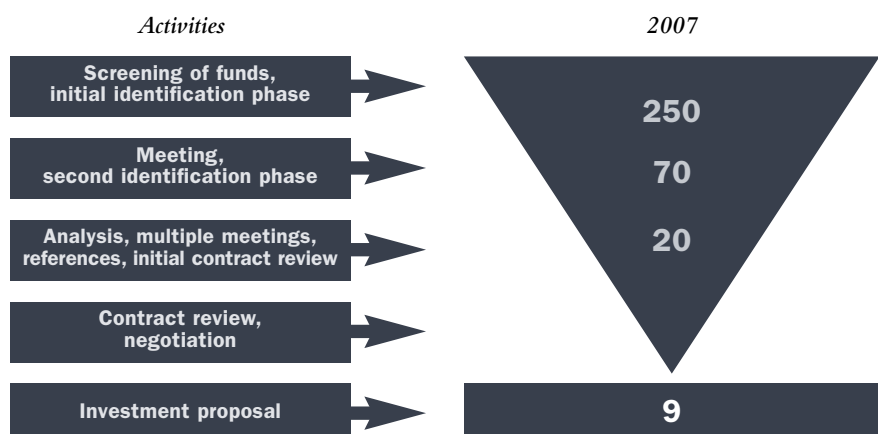
### Screening funnel leaves only the best

This is a good way of describing the Fund's selection process. Rather like a large funnel, into which the funds are poured. During 2007, close to 250 funds were funnelled for screening. The majority were removed in this initial

"Once everything has been approved, we compile all the information and make an investment proposal to the board. They make the final decision, as to whether we should invest or not."

"In 2007, we saw the fruit of our long-term efforts in previous years. We have monitored and analysed many funds

## Fund selection, private equity funds



# Unjustified mystique

*Private Equity. Venture capital funds. Terms that create an image of excitement and drama. Try saying 'unlisted holdings' instead. Less mysterious. But just as correct. The Second AP Fund has chosen to avoid the cool jargon and focus on the business of portfolio management. The fact is that we are talking about a major market, which is not that mysterious at all.*

"CVC, which invests in medium sized and large companies in Europe, has made a study to determine how many companies it can invest in, theoretically. The result was 16 000. This clearly presents much broader investment opportunities than those available to a fund manager limited to the stock market", says Anders Strömblad, head of Alternative Investments at the Second AP Fund.

He considers the mystique that surrounds unlisted holdings rather strange.

"There's nothing mysterious about it, even if many want it to seem that way. An unlisted holding is, quite simply, a normal limited company. And there are investors who are specialized in locating those limited companies with exceptional development potential. When they find such a company they invest in it, if the owner is willing to sell. The investor is then actively involved in developing the company. Once this process has been completed, the company is sold on," says Anders Strömblad.

## The funds have close relationships – this aids control

There is nothing mysterious about unlisted holdings. The majority of commercial activity in Sweden, and the world at large, is conducted outside the stock market. Investment in unlisted holdings therefore opens up many more good investment opportunities, at least in theory.

However, the degree of transparency and control in unlisted companies is thought to be lower than in exchange

ILPA

## ILPA – a uniting factor

*When Anders Strömblad took up his post as head of Alternative Investments (unlisted holdings) at the Second AP Fund, he was quick to appreciate that there were few investors of the same kind in Sweden. The same was true for the rest of Europe. For this reason, he got in touch with the ILPA (Institutional Limited Partner Association), an international association for like-minded, giving him access to useful experience in the hunt for the best investments.*

"When I started working with unlisted holdings, I quickly discovered a real need to establish contact with experienced investors, to be able to exchange information concerning their experiences with various fund managers, funds and companies," says Anders Strömblad.



**The Second AP Fund hosted the ILPA board meeting in the summer of 2007.**

Board members include representatives from some of the world's largest investors, such as the Canada Pension Plan and CalPERS, in the USA.

It was at this point that he came into contact with the ILPA, an organization for large institutional investors in unlisted holdings. It is a big organization, with 185 members from ten countries. These investors manage funds with unlisted holdings that have a combined market worth in excess of USD 850 billion.

Anders Strömblad is

not only a member, but is also the first 'non-North-American' to be elected to the board. And his colleague at the Second AP Fund, Britta Ersman, has also gained a place on the training committee.

Through the ILPA, Anders Strömblad gains access to what he was looking for from the start. "It's an open dialogue. I can be put in touch with contacts that are extremely valuable. And we also benefit from straightforward training programmes, which make us better investors," notes Anders Strömblad.

The ILPA also strives to create benchmark indexes for funds with unlisted holdings. This is somewhat of an untested area, largely because of the industry's relative youth. But also, of course, because it is more difficult to place a reliable value on unlisted holdings, because no daily market rates are available, as is the case with exchange listed companies.

"There's a lot to do, which makes us better investors. This is stimulating," says Anders Strömblad.



# Worth knowing about the Second AP Fund's investments in unlisted holdings

listed companies. For skilled investors, this offers considerable opportunities, because it means there are many hidden pearls that have been missed: pearls that are lying 'hidden', just waiting to be discovered. In a fully transparent market, such pearls are identified much sooner.

But reduced transparency can also mean increased risk.

"Yes, this is a common claim. But as long as you are thorough and patient, such anxiety is groundless. I actually wonder whether the funds we invest in may not even be better informed about their holdings than the more typical fund managers of exchange listed holdings."

But Anders Strömblad is careful to stress that, should an increased degree of transparency be introduced, through changes in the rules, he has nothing against it.

"No, definitely not. But I think it's important to provide an accurate picture of investment in funds with unlisted holdings. They are often described in a rather stereotyped manner, which provides a distorted view of the reality."

### A secondhand market also exists

Another common assumption is that your investment is locked in, if you invest in funds for unlisted companies. This is not so, according to Anders Strömblad, at least not for the funds in which the Second AP Fund invests.

"There's an established secondhand market for trading participations in funds. We consistently choose to invest in attractive funds. If we wish to sell our participation in a fund such as Nordic Capital, for example, interested buyers immediately appear. Today, these participations will sell for more than their booked value – even if the Second AP Fund deems that the greatest added value is generated by remaining a long-term investor in such funds".

### 1. May only invest via funds – no direct placements in unlisted holdings

The regulations governing the First to Fourth AP Funds state that investment in unlisted holdings may only be made via private equity funds. The AP Funds (1-4) may not invest directly in unlisted holdings.

### 2. Five percent in unlisted holdings – no more

According to the rules, the Second AP Fund may have a maximum of five percent of the Fund's combined assets invested in funds for unlisted holdings. This ceiling has yet to be reached. At year-end 2007, investments in this asset class amounted to 1.5 percent of total assets.

### 3. Shall generate a higher return than listed holdings

The Second AP Fund's target for investment in funds for unlisted holdings is to achieve an annual average return that significantly exceeds the anticipated return on listed equities, seen in the long term. At the same time, these investments shall contribute to a good spread of risk, due to low correlation with the rest of the Fund's assets. This is to say that the value of these holdings does not change at the same rate or in the same direction as, for instance, holdings in listed equities.

### 4. Relationships with 15 to 20 of the best

The Second AP Fund strives to select the elite from the most attractive funds for unlisted holdings, rather than passively investing a little in all of them. Nevertheless, a well-spread risk is important, to avoid placing all one's eggs in the same basket. For this reason, the Second AP Fund follows the principle of investing via 15-20 funds, which in their turn may manage several funds in which the Second AP Fund can invest.

### 5. Major preparatory work – often years of research behind investment

Through analyses must be conducted before investing in a fund for unlisted holdings, which often take several years. This analytical process, which involves many on-site visits at the fund manager, includes careful studies of the organization's structure and how to ensure that key competence is retained, in addition to analyses of investment strategies, returns achieved on investments, fee systems and profit sharing.

### 6. Good reputation – decisive to ROI

The Second AP Fund aims to establish a good reputation as an investor, as this creates better prospects for a good return and ensures that the Fund has access to the best investment opportunities. Studies indicate that a relatively small number of the funds that invest in unlisted holdings account for a large part of surplus returns. Studies also show that the funds that have performed well over time continue to perform well in future. This fuels strong demand – the successful funds can more or less pick their investors, who are queuing up to invest. It is therefore important to be numbered among the select few known as 'preferred partners', which such funds consider welcome investors.

## THE PROUD AP2 TEAM:

# We are the Second AP Fund...

### Executive management

#### Executive management and staff



**Eva Halvarsson**  
*CEO*

21 years' professional experience  
AP2 since 2006  
Previous career: Division of State-owned Companies at the Ministry of Industry, National Ministry of Communications and the Swedish Tax Board



**Lena Smeby-Udesen**  
*CFO*

24 years' professional experience  
AP2 since 2001  
Previous career: Swedbank, Ericsson, Volvo



**Poul Winslöv**  
*CIO*

18 years' professional experience  
AP2 since 2003  
Previous career: Danske Securities, Danske Invest, Unibank Investment Management, Nordea Investment Management

### Executive management (CONT.)



**Tomas Franzén**  
*Chief Investment Strategist*

27 years' professional experience  
AP2 since 2001  
Previous career: Swedbank, Handelsbanken, SAF



**Martin Jonasson**  
*General Counsel*

18 years' professional experience  
AP2 since 2001  
Previous career: Volvo, Mannheimer Swartling



**Carl Rosén**  
*Head of Corporate Governance and Communications*

25 years' professional experience  
AP2 since 2004  
Previous career: Nordic Investor Services, Enskilda, Affärsvärlden, Alfred Berg



**Lena Sörensson**  
*HR Manager*

31 years' professional experience  
AP2 since 2001  
Previous career: Delphi Automotive Systems AB, Ericsson, Bostads AB Poseidon, Göteborg Municipality.



**Margaretha Veres**  
*Personal Assistant to the CEO*

41 years' professional experience  
AP2 since 2000  
Previous career: Ericsson



**AnCi Johannisson**  
*Information & Projects*

36 years' professional experience  
AP2 since 2000  
Previous career: Intra International, Almedahls, Wicanders



**Cathrin Olsson**  
*Reception & Office Administration*

16 years' professional experience  
AP2 since 2001  
Previous career: Poolia Hotell Opera, Hotell Kung Oscar, Häfreströms AB



**Maria Andersson**  
*Reception & Office Administration*

16 years' professional experience  
AP2 since 2004  
Previous career: Proffice, Samuelsons Inredningar, Åhléns



## Quantitative Strategies

### Portfolio Management

**Poul Winslöv**  
CIO  
See "Executive Management & Staff "



**Tomas Morsing**  
*Head of Quantitative Strategies*  
17 years' professional experience  
AP2 since 2002  
Previous career: AstraZeneca R&D



**Mia Claesson**  
*Quantitative Portfolio Manager, Equity & Fixed Income*  
9 years' professional experience  
AP2 since 2004  
Previous career: Citigroup Asset Management, Hagströmer & Qviberg, Dunross & Co



**Claes Ekman**  
*Quantitative Portfolio Manager, Equity*  
12 years' professional experience  
AP2 since 2007  
Previous career: AstraZeneca R&D

## Quantitative Strategies (CONT.)



**Thomas Ekström**  
*Quantitative Analyst, ALM & Tactical Allocation*  
4 years' professional experience  
AP2 since 2004  
Previous career: Göteborg University



**Peter Mannerbjörk**  
*Quantitative Portfolio Manager, Fixed Income*  
3 years' professional experience  
AP2 since 2005  
Previous career: Chalmers Institute of Technology, Göteborg School of Economics



**Reine Säljö**  
*Quantitative Portfolio Manager, Equity*  
9 years' professional experience  
AP2 since 2006  
Previous career: Own software company



**Mathias Eriksson**  
*Quantitative analyst*  
6 years' professional experience  
AP2 since 2005  
Previous career: Svenska Garantiprodukter

## Swedish Alpha Strategies



**Fredrik Carlsson**  
*Head of Equities & Fixed Income, Sweden*  
12 years' professional experience  
AP2 since 2002  
Previous career: Bank of America, HSBC Investment Bank and Fidelity



**Claes-Göran Lyrhem**  
*Portfolio Manager, Swedish Equity*  
27 years' professional experience  
AP2 since 2003  
Previous career: PricewaterhouseCoopers, Bilspedition, KPMG



**Jonas Eixmann**  
*Portfolio Manager, Small Cap*  
12 years' professional experience  
AP2 since 2005  
Previous career: Handelsbanken Capital Markets



**Johan Sjöström**  
*Equity Analyst*  
9 years' professional experience  
AP2 since 2007  
Previous career: Atlet, Volvo

## Swedish Alpha Strategies (CONT.)



**Caroline Häggqvist**  
*Equity Analyst*  
1 years' professional experience  
AP2 since 2007  
Previous career: Göteborg School of Economics



**Anders Lekholm**  
*Portfolio Manager, Equities*  
11 years' professional experience  
AP2 since 2001  
Previous career: Bear Stearns (USA), Matteus Fondkommission



**Anders Johansson**  
*Portfolio Manager, Fixed Income*  
18 years' professional experience  
AP2 since 2008  
Previous career: Nordea Markets, Unibank, SKF

## Global Alpha Strategies



**Lars Seiz**  
Head of Global Alpha Strategies  
21 years' professional experience  
AP2 since 2008  
Previous career: SEB



**Cristian Stoian**  
Portfolio Manager  
21 years' professional experience  
AP2 since 2001  
Previous career: Daiwa SBCM, Marketpower Ltd.



**Anders Sköldbberg**  
Portfolio Manager, Cash-management & F/X  
20 years' professional experience  
AP2 since 2002  
Previous career: SKF, Nordbanken, PKbanken, Posten



**Michael Störup**  
Portfolio Manager, Foreign Exchange  
20 years' professional experience  
AP2 since 2001  
Previous career: Inter IKEA Treasury SA, SKF Treasury, Hafnia Insurance, Jyske Bank

## Global Alpha Strategies (CONT.)



**Jens Bergrahm**  
Portfolio Manager  
20 years' professional experience  
AP2 since 2008  
Previous career: SKF, Cellmark, SEB



**Johan Wadell**  
Portfolio Manager  
18 years' professional experience  
AP2 from April 2008  
Previous career: Holtback & Partners, Bure, SEB



**Ole Petter Langeland**  
Head of Tactical Asset Allocation  
20 years' professional experience  
AP2 since 2001  
Previous career: SEB, E.Öhman jr Fondkommission, Volvo Group Finance Sweden AB



**Håkan Wilke**  
Trading Derivatives  
9 years' professional experience  
AP2 since 2001  
Previous career: Svensk Fondstatistik

## Tactical Asset Allocation

## Portfolio Management, External Mandates



**Anders Strömblad**  
Head of Alternative Investments  
28 years' professional experience  
AP2 since 2000  
Previous career: SCA, Swedish Meats (Scan), National Tax Board

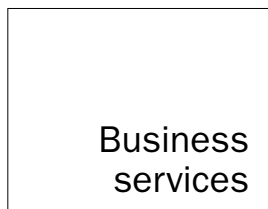


**Britta Ersman**  
Portfolio Manager, External Managers & Private Equities  
7 years' professional experience  
AP2 since 2001  
Previous career: Sjötte AP-fonden



**Mimmi Kheddache Jendebý**  
Portfolio Manager, External Managers  
5 years' professional experience  
AP2 since 2003  
Previous career: Göteborg School of Economics

## Financial Control & Accounting



**Lena Smeby-Udesen**  
CFO  
See "Executive Management & Staff "



**Marianne Stenberg**  
Head of Financial Accounting & Control  
18 years' professional experience  
AP2 since 2002  
Previous career: KPMG



**Yvonne Janslätt**  
Financial Accounting  
21 years' professional experience  
AP2 since 2001  
Previous career: Ernst & Young, SEB



**Anders Eriksson**  
Financial Accounting & Control  
14 years' professional experience  
AP2 since 2003  
Previous career: Proffice, GNLD

## Business Control



**Lars Lindblom**

*Head of Business Control*

9 years' professional experience  
AP2 since 2001

Previous career: SEB



**Anders Waller**

*Business Controller*

21 years' professional experience  
AP2 since 2003

Previous career: SEB och SKF



**Susanne Sohlberg**

*Business Controller*

26 years' professional experience  
AP2 since 2002

Previous career: Volvo



**Johan Lagergren**

*Business Controller*

4 years' professional experience  
AP2 since 2008

Previous career:  
PricewaterhouseCoopers

## Performance Analysis



**Ola Eriksson**

*Head of Performance Measurement*

18 years' professional experience  
AP2 since 2001

Previous career: Volvo, Nordiska  
Finanssystem, Celsius



**Olle Eriksson**

*Performance Measurement*

6 years' professional experience  
AP2 since 2002

Previous career:  
Göteborg University



**Roger Hansson**

*Performance Measurement*

2 years' professional experience  
AP2 since 2007

Previous career: SEB



**Jessika Ingvarsson**

*Systems Manager*

10 years' professional experience  
AP2 since 2001

Previous career: Sveriges Ång-  
fartygs Assurans Förening – The  
Swedish Club

## IT



**Gunilla Engelbrektsson**

*Head of IT*

15 years' professional experience  
AP2 since 2001

Previous career: Volvo IT,  
Volvo Treasury



**Björn Iveland**

*IT Support & Operations*

10 years' professional experience  
AP2 since 2006

Previous career: Nobel Biocare,  
Telia



**Christian Salomonsson**

*IT Support & Operations*

9 years' professional experience  
AP2 since 2002

Previous career: Volvo IT,  
Merkantildata

## Risk Management



**Mia Tegbrant**

*Head of Risk Management*

17 years' professional experience  
AP2 since 2001

Previous career: PWC, SEB Enskilda  
Banken, Trygg Hansa Livförsäkring



**Camilla Jenedahl**

*Senior Risk Analyst*

12 years' professional experience  
AP2 since 2001

Previous career: Volvo Treasury AB



**Håkan Tobiasson**

*Senior Risk Analyst*

11 years' professional experience  
AP2 since 2005

Previous career: Riksbanken



**Andra AP-fonden**  
*Second Swedish National Pension Fund - AP2*

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