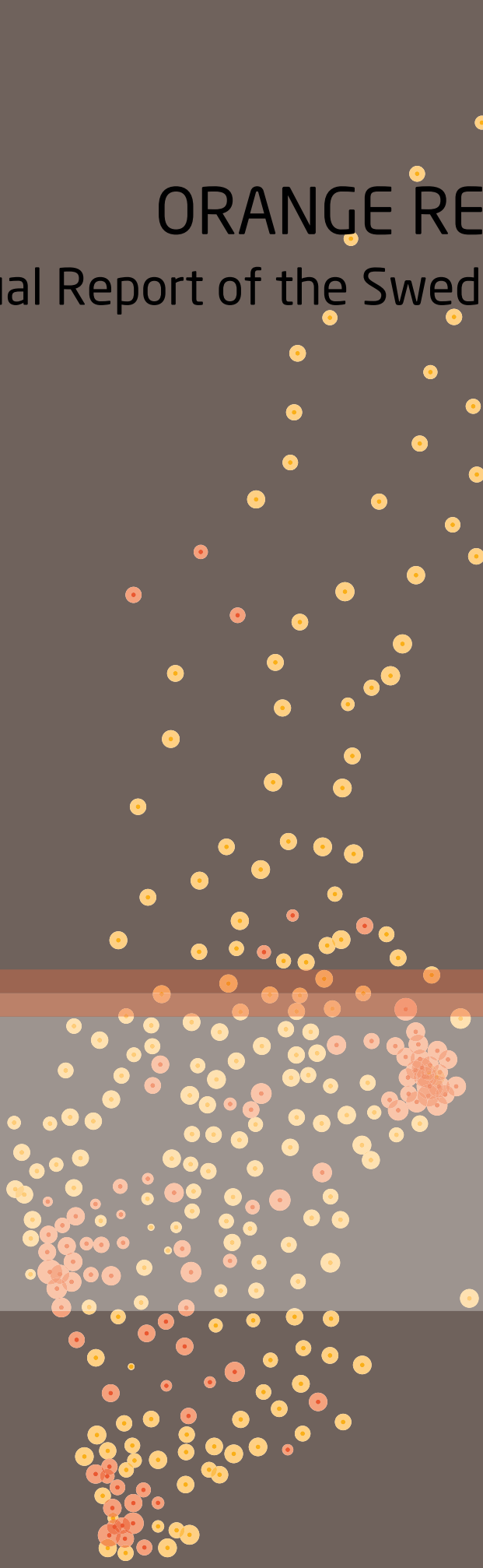
ORANGE REPORT

Annual Report of the Swedish Pension System



SWEDISH
PENSIONS AGENCY

2013

What is the Orange Report?

The Orange Report 2013 describes the financial status of the *national* income-based pension pension at year-end 2013, developments during 2013, and three future scenarios.

In addition to national inkomstpension and national premium pension there are also occupational pensions and pensions paid from private pension plans. For these, data is currently available only up to 2012. The following table shows contribution/premium income and payments in 2012, as well as funded capital at year-end 2012 for all three types of pension. However, the amounts for occupational and private pensions are only approximate. Occupational pensions may be secured by other means than through premium payments. For example, the employer may report occupational pension rights as a pension liability in the company balance sheet. In addition, there are funds set aside for occupational pension in a large number of pension funds. These funds are not included in the table below.

Total annual fees and premiums for national pension, occupational pensions, and private pensions are estimated at 417 billion SEK, of which the national pension's 258 billion SEK represents 62 percent. The wage bill in Sweden amounted to approximately 1,467 billion in 2012 (including earnings of the self-employed). This means that we set aside an amount equal to 28 percent of our salaries for various pensions.

Funded capital in the national pension amounted to 1,473 billion on 31 December 2012. That equates to approximately 40 percent of total funded pension capital in Sweden. The Swedish Pension Agency paid out 238 billion SEK in income and premium pension in 2012. This represents 71 percent of total pensions paid out that year according to the table below.

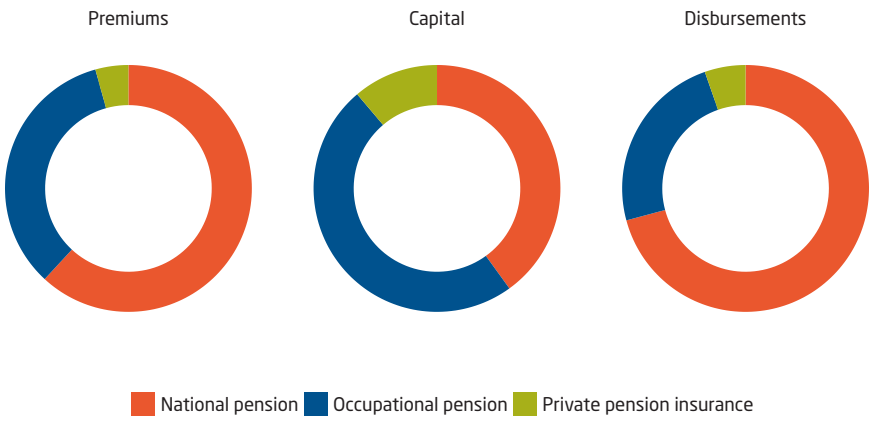
In 2012, in addition to inkomstpension and premium pension, the Swedish Pension Agency paid out guarantee pension to the amount of 18 billion SEK. Other pension-related benefits paid to the elderly are income-based widow's pension to the amount of 13 billion SEK, housing supplement to the amount of 8 billion SEK and support for the elderly to the amount of 0.6 billion SEK. These benefits are financed from the state budget and are not reported in the Orange Report.

The Orange Report covers well over half of Sweden's pension business regarding contributions and disbursements but a somewhat lower proportion regarding funded capital. This is because the inkomstpension scheme is a pay-as-you-go system with a buffer fund and not a fully funded pension system.

Swedish Pensions 2012 *
billions of SEK

	Premiums	Capital	Disbursements
Income-based pension	258 (62 %)	1,473 (40 %)	238 (71 %)
Occupational pension	141 (34 %)	1,795 (49 %)	80 (24 %)
Private pension	18 (4 %)	412 (11 %)	18 (5 %)
Total	**417 (100 %)**	**3,680 (100 %)**	**336 (100 %)**

* Disbursements for occupational pension and private pension refer only to persons aged 65 or over.



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Annual Report of the Swedish Pension System 2013

Swedish Pensions Agency

Stockholm 2014

Further information on the Swedish national public pension system is available at the Swedish Pensions Agency website:
www.pensionsmyndigheten.se.

For information on the National Pension Funds, please see the websites of the respective funds:
www.ap1.se, www.ap2.se, www.ap3.se, www.ap4.se, and www.ap6.se.

We at the Swedish Pensions Agency thank the readers of Orange Report for their questions and views, which have helped enhance the quality of the report.

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The cover picture shows the relationship between pension contributions and pension payments broken down by municipality per qualifying year 2012. In municipalities with red dots contribution income exceeds disbursements and vice versa in municipalities with yellow dots. The size of the points reflects the size of surplus/deficit of the municipality.

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20 Years is No Age at All

Pensions are usually long-term. Both for us policy holders and for those who make the decisions. That is why there is sometimes talk of "the new" pension system even though it was actually 20 years ago the political deal was clinched. At that time five parliamentary parties came to an agreement. They set up a form of standing committee, the Pension Group, responsible for overseeing the implementation of the pension agreement. Shortly before this Orange Report went to press, the group presented an agreement with proposals for safeguarding the national pension. The proposals are based on a series of investigations, such as the Retirement Age and Buffer Capital investigations, a review of premium pension, and the Swedish Pension Agency's proposals for reducing the fluctuations of income-based pension between different years. This latter proposal is one of the most concrete items in the deal.

Naturally we draw a clear line between our mission, which is to manage the system, and the politicians' mission, which is to determine what system to use. But that does not prevent us from proposing improvements to the pension system when we see that it could work better for pensioners and pension savers. We do this because every day we see how the system works and every day we talk to those affected.

Naturally it will be some time before this pension agreement impacts the Orange Report. For the current report is not just about the past year, but also about future prospects based on the rules we have today. This is part of our assignment for the decision makers, who need the facts about how the system works. We make forecasts several times a year, but here in the Orange Report the vision is longer. The system's contribution rates, pensions, assets and liabilities are "guessed at" for a period of 75 years. The model we use to guess the future is now available to everyone on our website. Those interested can themselves use the model and simulate different long-term outcomes, depending on their view of future demographic and socio-economic developments. Anyone who wants to see what happens to individuals as a result of different life choices can use our model scenarios, also located on the site. We provide these services not only because it is our mandate, but also because we wish to help promote further debate and greater knowledge of the pension system.

Both the Orange Envelope and the Orange Report deal with the Swedish national pension. But for us individual pension savers, occupational pension is also important. Swedish Pension Agency surveys suggest that as many as 20 percent believe all the pension they can expect to receive appears in the Orange Envelope's forecast. That's why we put so much effort into getting people to log on to our website or to visit minpension.se where the total pension can be seen. If you too tip off a friend, you'll have contributed to making pensions a lot less complicated.

Katrin Westling Palm
Director General, Swedish Pensions Agency

1 Results of the Pension System in Brief

Sweden's income-based pension consists of the inkomstpension and the premium pension. The inkomstpension referred to in this report includes the ATP (supplementary pension) which is being gradually phased out. The inkomstpension and the premium pension are defined-contribution, financially stable pension systems. With this design, liabilities and assets normally change by the same amount; in other words, the net income is more or less equal to zero. In principle, this is fully applicable to the premium pension system, whereas the inkomstpension allows substantial differences from year to year between the development of liabilities and assets, with the qualification, however, that accumulated deficits are not allowed to remain in the system.

Inkomstpension

The inkomstpension system is a pay-as-you-go system, and pension contributions paid in are used to pay retirees in the same year. The surpluses or deficits that arise when pension contributions are greater or less than pension disbursements are absorbed by the buffer fund.

The assets of the system are the value of future pension contributions, referred to as the contribution asset, and the buffer fund. The contribution asset is calculated as follows: contribution revenues (smoothed values for the latest three years) are multiplied by the expected average time that one krona will remain in the pension system, referred to as turnover duration.

The pension liability consists partly of a liability to the economically active and partly of a liability to retirees. The liability to the economically active is mainly the sum of the pension balances of everyone (the last row in the account statement of everyone's Orange Envelope). The pension liability to retirees is the expected total of all pensions paid to today's pensioners for the rest of their lives. The pension liability changes primarily with the annual indexation of pensions and pension account balances. Indexation is determined by the change in the average income in Sweden, in combination with the balance ratio in years when balancing is activated.

The result of the inkomstpension system is affected by numerous key economic and demographic factors. In the short run the development of employment is the most important factor, but the effect of the stock and bond markets on the buffer fund is also of significance, particularly in case of major changes. In the long run demographic factors are most important.

The balance ratio is a measure of the financial position of the system and is calculated as system assets divided by the pension liability. Since 2008, however, the value of the buffer fund is calculated as the average of the market value of the fund on December 31 of the latest three years. If the balance ratio is less than 1.0000, that is, if the liabilities of the system exceed the assets, so-called balancing is activated to restore the long-term financial balance of the system. Balancing is a part of indexation and means that indexation of pensions and pension balances is reduced. The pension liability is then revalued at a slower rate, and the pension system is strengthened financially. Any surpluses that arise after balancing has been activated is used directly to increase indexation as much as possible and thus to restore the value of pensions.

The result for 2013 was SEK 207 billion. Together with a capital deficit of SEK 80 billion from 2012, this yields a capital surplus of SEK 127 billion at the end of 2013. The reason for the positive result for the year is that assets increased more than liabilities in 2013. Assets exceed liabilities by 1.6 percent.

The balance ratio of the system is calculated at 1.0040. The balance ratio will affect recalculation of pension balances and pension disbursements at the turn of 2014/2015.

Assets in 2013 increased by 3.9 percent during the year. The contribution asset rose by SEK 208 billion, or 3.0 percent, owing to higher earnings and other pension-qualifying income. The levelled-out turnover rate decreased, however, reducing the increase in the contribution asset by SEK 6 billion. The buffer fund – that is, the First–Fourth and Sixth National Pension Funds – increased by SEK 100 billion, or 10.04 percent. The return on the fund was SEK 128 billion, or 13.4 percent in relation to the opening balance. As with 2012, 2013 was a year when expenditure, pension disbursements and costs of administration, exceeded pension contributions paid into the inkomstpension system. The difference had a negative effect of SEK 28 billion. In total, the assets of the inkomstpension system increased by SEK 308 billion, or 3.9 percent.

The pension liability in 2013 increased during the year by SEK 101 billion, or 1.3 percent. The recalculation of the liability, or indexation, reduced the liability to the economically active by SEK 56 billion, whereas recalculation of the liability to retirees entailed an increase of SEK 152 billion. In total, the effect was an increase of the pension liability by SEK 96 billion. The pension disbursements of the year exceeded pension credit earned for the year and ATP points, including certain adjustments, thus contributing to a reduction of the liability by SEK 12 billion. The liability to retirees is affected by changes in life expectancy. Compared to 2012, the average expected payout duration (economic life expectancy) for a 65-year-old has increased by 25 days. Because of the longer expected payout duration, the liability has grown by SEK 16 billion.

Six-Year Review

billions of SEK

Calculation year	2008	2009	2010	2011	2012	2013
Balancing year	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Buffer fund, mean value [1]	821	811	810	865	908	963
Buffer fund	707	827	895	873	958	1058
Contribution asset	6,477	6,362	6,575	6,828	6,915	7,123
Total assets	7,184	7,189	7,469	7,700	7,873	8,180
Pension liability	7,428	7,512	7,367	7,543	7,952	8,053
Surplus/Deficit	-243	-323	103	157	-80	127
Balance ratio	0.9826	0.9549	1.0024	1.0198	0.9837	1.0040
Financial position [2]	0.9672	0.9570	1.0140	1.0208	0.9900	1.0158

1 Mean value of the fund as of December 31 for the past three years.

2 The balance ratio according to the previous defintion (up to and including calculation year 2007), that is, it is calculated solely on the basis of the market value of the buffer funds as of December 31 of the respective year.

Premium Pension

The premium pension system is a funded system where pension savers themselves choose the funds in which to invest their premium pension moneys. The pension is disbursed from the proceeds of selling off accumulated capital. The assets consist of the investments in funds by pension savers. The pension liability to the economically active and to retirees is related primarily to fund shares. Changes in the value of fund shares affect the assets of pension savers in the system, directly and to an equal degree. With conventional insurance, the pension liability is the value of the remaining guaranteed disbursements. That value is calculated with assumptions about future return, life expectancy and

operating costs. In the premium pension system all payments in and out of the system and all changes in value have in principle the same effect on system assets and liabilities. The positive result of the system belongs to pension savers and is invested in the consolidation fund as owner equity. The moneys in the consolidation fund for conventional insurance are disbursed as rebates in connection with pension disbursements. Moneys in the consolidation fund for fund insurance are deducted from the following year's contributions to cover operational costs.

As of December 31, 2013, the value of pension savers' premium pension assets amounted to SEK 644,874 million. The increase in value for fund insurance was 21.1 percent.

The result for the year 2013 was SEK 1,684 million. In addition to a positive result of SEK 132 million from fund operations, the result is affected by SEK 1,573 million in conventional insurance, by SEK -8 million in trading in fund shares via the trading inventory and by SEK -13 million in net interest.

The principal reason for the year's positive result in conventional insurance is that the proportion of retirees choosing conventional insurance have a greater stake in the premium pension system then in previous years. The result is influenced by the fact that premiums paid in exceed pension disbursements.

Trading in fund shares via the trading inventory decreased by SEK 67 million. Foreign exchange profits have decreased in fund trading compared with 2012 because there were no major swings to the Swedish kronor in foreign currencies when fund switches were made. Net interest rate has decreased by SEK 14 million due to fixed interest loans maturing and being transferred to variable rate loans.

Assets in 2013 increased during the year by SEK 130 billion. The change in insurance assets chiefly refers to newly-earned pension credit, positive changes in value, allocated management fees, and pension disbursements as noted above.

The pension liability in 2013 increased by SEK 132 billion. The change in the pension liability refers in principle to the same newly earned pension credit, positive changes in value, allocated management fees and pension disbursements as noted above.

Six-Year Review

millions of SEK

	2008	2009	2010	2011	2012	2013
Fund insurance	231,600	341,371	409,640	394,468	472,437	603,540
Conventional insurance	1,733	2,212	4,953	8,870	10,868	12,907
In temporary management	28,180	27,584	28,652	30,191	31,455	28,427
Insurance assets	**261,513**	**371,167**	**443,245**	**433,529**	**514,760**	**644,874**
Pension liability	260,670	370,502	441,576	431,144	511,522	643,889
Net income/loss for the year	-100	547	1,249	1,018	1,052	1,684

2 Income Statement and Balance Sheet

Inkomstpension, Income Statement and Balance Sheet

Income Statement
millions of SEK

	Note	2012	2013	Change
Change in fund assets		85,397	99,561	14,164
Pension contributions	1	221,765	227,370	5,605
Pension disbursements	2	-236,039	-253,966	-17,927
Return on funded capital	3	101,395	127,899	26,504
Costs of administration	4	-1,724	-1,742	-18
Change in contribution asset		86,795	208,325	121,530
Value of change in contribution revenue	5	119,696	214,619	94,923
Value of change in turnover duration	6	-32,901	-6,294	26,607
Change in pension liability [1]		-409,054	-101,067	307,987
New pension credit	7	-228,098	-242,027	-13,929
Pension disbursements	2	236,020	253,960	17,940
Indexation	8	-403,440	-96,141	307,299
Value of change in life expectancy	9	-12,880	-16,064	-3,184
Inheritance gains arising	10	11,353	12,055	702
Inheritance gains distributed	10	-13,400	-14,264	-864
Deduction for costs of administration	11	1,391	1,414	23
Net income/-loss for the year		**-236,862**	**206,819**	**443,681**

1 A negative item (-) increases the pension liability, and a positive item () decreases it, by the amount shown.

Balance sheet
millions of SEK

	Note	2012	2013	Change
Assets				
Fund assets	12	957,990	1,057,551	99,561
Contribution assets	13	6,914,567	7,122,892	208,325
Total Assets		**7,872,557**	**8,180,443**	**307,886**
Liabilities and results brought forward				
Closing results brought forward		-79,759	127,060	206,819
Opening results brought forward		157,103	-79,759	-236,862
Net income/-loss for the year		-236,862	206,819	443,681
Pension liability	14	7,952,316	8,053,383	101,067
Total Liabilities and results brought forward		**7,872,557**	**8,180,443**	**307,886**

Premium Pension, Income Statement and Balance Sheet

Income Statement
millions of SEK

	Note	2012	2013	Change
Change in fund assets		82,792	136,686	53,894
Pension contributions	1	36,639	38,580	1,941
Pension disbursements	15	-2,299	-3,197	-898
Return on funded capital	16	48,847	101,666	52,819
Costs of administration	17	-395	-363	32
Change in pension liability [1]		-81,740	-135,002	-53,262
New pension credit	18	-36,639	-38,580	-1,941
Pension disbursements	15	2,299	3,197	898
Change in value	16	-47,826	-100,093	-52,267
Inheritance gains arising	19	1,062	1,152	90
Inheritance gains distributed	19	-1,062	-1,152	-90
Deduction for costs of administration	20	426	474	48
Net income/-loss for the year		**1,052**	**1,684**	**632**

1 A negative item (-) increases the pension liability, and a positive item () decreases it, by the amount shown.

Balance sheet
millions of SEK

	Note	2012	2013	Change
Assets				
Insurance assets	21	514,760	648,481	133,721
Fund insurance		472,437	603,540	131,103
Conventional insurance		10,868	12,907	2,039
Temporary management		31,455	32,034	579
Other assets	22	2,955	3,716	761
Total Assets		**517,715**	**652,197**	**134,482**
Liabilities and results brought forward				
Closing results brought forward	23	2,234	3,709	1,475
Opening results brought forward		1,182	2,025	843
Net income/-loss for the year		1,052	1,684	632
Liabilities		515,481	648,488	133,007
Pension liability	24	511,522	643,889	132,367
Other liabilities	25	3,959	4,599	640
Total Liabilities and results brought forward		**517,715**	**652,197**	**134,482**

Inkomstpension and Premium Pension, Income Statement and Balance Sheet

Income Statement

millions of SEK

	2012	2013	Change
Change in fund assets	168,189	236,247	68,058
Pension contributions	258,404	265,950	7,546
Pension disbursements	-238,338	-257,163	-18,825
Return on funded capital	150,242	229,565	79,323
Costs of administration	-2,119	-2,105	14
Change in contribution asset	86,795	208,325	121,530
Value of change in contribution revenue	119,696	214,619	94,923
Value of change in turnover duration	-32,901	-6,294	26,607
Change in pension liability [1]	-490,794	-236,069	254,725
New pension credit	-264,737	-280,607	-15,870
Pension disbursements	238,319	257,157	18,838
Indexation	-403,440	-96,141	307,299
Value of change in life expectancy	-12,880	-16,064	-3,184
Inheritance gains arising	12,415	13,207	792
Inheritance gains distributed	-14,462	-15,416	-954
Deduction for costs of administration	1,817	1,888	71
Net income/-loss for the year	**-235,810**	**208,503**	**444,313**

1 A negative item (-) increases the pension liability, and a positive item () decreases it, by the amount shown.

Balance sheet

millions of SEK

Other assets	**2,955**	**3,716**	**761**
Contribution assets	6,914,567	7,122,892	208,325
Fund assets	957,990	1,057,551	99,561
Total Assets	8,390,272	8,832,640	442,368
Assets			
Insurance assets	**514,760**	**648,481**	**133,721**
Liabilities and results brought forward			
Closing results brought forward	-77,525	130,769	208,294
Opening results brought forward [1]	158,285	-77,734	-236,019
Net income/-loss for the year	-235,810	208,503	444,313
Liabilities	8,467,797	8,701,871	234,074
Pension liability	8,463,838	8,697,272	233,434
Other liabilities	3,959	4,599	640
Total Liabilities and results brought forward	**8,390,272**	**8,832,640**	**442,368**

1 Opening results brought forward differs from Closing results brought forward last year, see Note 23.

3 Accounting Principles

The data on the financial position of the inkomstpension have been presented previously in the annual report of the Swedish Pensions Agency. Certain data, however, were preliminary at the time the annual report of the Pensions Agency was confirmed, and in the Orange Report they have been revised where needed. The audit of the information in the balance sheet and income statement is performed in connection with the confirmation of the Pensions Agency's annual report. Information concerning the premium pension has also been presented previously in the annual report of the Pensions Agency. However, certain adjustments and simplifications of the information on the premium pension have been made to facilitate comparisons between the two systems.

Regulations and Guidelines

The Annual Report of the Pension System has been prepared in accordance with Chapter 55 § 4 of the Social Insurance Code (2010:110) on the Earnings Related Old Age Pension (SFB) and Regulation (2002:135) Annual Reporting of the Financial Position and Development of the Old-Age Pension System.

The income-related old-age pension system includes the benefits provided by the inkomstpension, the ATP and the premium pension.[1]

The inkomstpension and the ATP are examples of benefits in a pay-as-you-go pension system. In such systems, contributions are not funded, but in principle are used directly to finance pension disbursements. The National Pension Funds are buffer funds that absorb differences between the inflow of contributions and the outflow of pensions. As elsewhere in the accounts, the term "inkomstpension" is used here in reference to the entire pay-as you-go system; in other words, it often applies to the ATP as well. According to Chapter 58 § 14 SFB, the reported assets of the pay-as-you-go system consist of the contribution asset and the value of the assets of the First–Fourth and Sixth National Pension Funds. Formulas for calculating the contribution asset and the pension liability of the inkomstpension system are provided in the Regulations for Calculation of the Balance Ratio (2002:780). These formulas are also found in Appendix B.

The premium pension system is a fully funded pension system where contributions are invested and the proceeds of selling accumulated capital are used to pay pensions.

According to the Regulations for the Annual Report (2002:135), the Orange Report is to include a projection of the assumed long-term development of the pension system. See the chapter Three Scenarios for the Future of the Pension System.

The accounting principles of the National Pension Funds are set forth in their annual reports and are therefore not described in this report. The annual report of each national pension fund is available on the home page of the respective fund: www.ap1.se, www.ap2.se, www.ap3.se, www.ap4.se and www.ap6.se. As the annual report of the Swedish Pensions Agency describes the accounting principles used for the premium pension, these are only presented in summary form in this report. For further information, see www.pensionsmyndigheten.se.

[1]The guaranteed pension, which is part of the national pension system, is not based on earnings and is therefore not included in the accounts.

Where Do the Figures Come From?

The accounting for the inkomstpension system is based on data from the records of the Swedish Pensions Agency on pension credit earned and pension disbursements, respectively.

In the Annual Report of the Swedish Pension System, information on the operations of the First–Fourth and Sixth National Pension Funds has been taken primarily from the annual reports of the respective funds.[2] The buffer funds prepare their annual reports according to the Law on National Pension Funds (2000:192). Furthermore, on the basis of applicable provisions for comparable financial companies, the funds have developed common principles for accounting and valuation.

In the Annual Report of the Swedish Pension System, information on the premium pension has been taken from the annual report of the Swedish Pensions Agency, which was prepared as provided in Regulation (2000:605) on Annual Reports and Supporting Documentation for Budgeting. Invested assets (and the corresponding liabilities) of the premium pension system have been valued according to the provisions of the Law (1995:1560) on Annual Reports of Insurance Companies and according to the regulations and general guidelines of the Swedish Financial Supervisory Authority for Annual Reports of Insurance Companies. The assets and liabilities of the premium pension systems are included in the consolidated balance sheet of the Swedish Pensions Agency, and the operations of the premium pension system are reported in a separate section of the income statement. Certain revisions, simplifications and consolidations have been made to facilitate comparison between the presentation and that of the inkomstpension.

Assets and liabilities included in the temporary management of pension contributions are reported in the Orange report as an insurance asset and pension liability. This is a deviation compared to the Swedish Pensions Agency annual report.

Reporting of the share of the joint assets, liabilities and result of the Swedish Pensions Agency has been simplified by reporting a net amount as part of the balance sheet so that the balance sheet will balance.

Principles for Valuation of Assets and Liabilities

The assets and liabilities are valued mainly on the basis of events and transactions that are verifiable at the time of valuation. For example, the fact that contribution revenue normally changes at the rate of economic growth is not considered in the calculation of the contribution asset. Nor is consideration given in the valuation of the pension liability to the fact that pension disbursements, through indexation and other factors, will change in the future. The principle of valuing assets and liabilities without regard to the future arises from the fact that the financial position of the system is determined totally by the relationship between assets and liabilities, that is, the ratio termed the balance ratio.

Through the design of the inkomstpension, there is a strong link between the development of the system's assets and liabilities, respectively. When balancing is activated, there is basically an absolute link between the respective rates of change in liabilities and in assets.[3]

The way in which the assets and liabilities of the inkomstpension system are valued is based on the assumption that these will change at the same rate after each valuation. To put it another way, the method of valuation is based on the assumption that the system's future internal rate of return will be the same as the future change in the value of the pension liability, even though this is certain only

[2]The accounting of the inkomstpension system in the annual report of the Swedish Pensions Agency for 2013 is based on preliminary information in regard to the operations of the National Pension Funds.

[3]With the method for calculating turnover duration, there is an implied assumption that the size of the economically active population will remain constant. If the population decreases, there is consequently a risk that the accounts will (somewhat) overestimate the system's assets in relation to its liabilities. It is reasonable to take for granted, however, that the population decrease will end at some point. If events take this course, the underestimation, and the possible resulting deficit in the buffer fund, will be temporary. The buffer fund will in time return to a level of at least SEK zero.

if balancing is activated. When balancing is not activated, the internal rate of return may be either greater or less than the change in the value of the pension liability.

The valuation of the contribution flow and the pension liability is based almost exclusively on conditions prevailing at the time of valuation. This is not due to any belief that all these factors will remain totally constant. Rather, the accounting is designed not to include changed conditions until the changes are reflected in the events and transactions on which the accounting is based.

Valuation of Inkomstpension Assets

The basis for valuation of the contribution asset is the size of the pension liability that the contribution revenue for the accounting year – i.e. paid-in pension contributions – could finance if the conditions prevailing at the time of valuation remained constant. The relevant determinants here, in addition to the rules of the pension system, are economic and demographic. The economic conditions consist of the average pension-qualifying income of each annual birth cohort and the sum of these incomes. The demographic factors relate to mortality at different ages. The relevant rules for the pension system are those that govern the calculation and the indexation of the inkomstpension, define the contribution and pension base and determine the contribution in percent. The contribution asset is calculated in principle by multiplication of the contribution revenue of the accounting year by the turnover duration for the same year.[4] Turnover duration expresses how much time it takes, on average, from the payment of SEK 1 in revenue into the system to the disbursement of a pension based on the pension credit arising at the time the pension credit was earned. Thus, turnover duration reflects the age difference between the average pension contributor and the average pensioner that would result if the economic, demographic and legal conditions were constant.

The fact that the valuation of the contribution flow is determined by multiplying the year's flow by turnover duration is equivalent to valuing the contribution flow by an assumedly permanent stream of contributions, with the inflow each year equal to the contributions of the previous year, discounted by a rate of one (1) divided by turnover duration. If turnover duration increases, the rate of discount decreases, and the value of the contribution flow increases. If turnover duration goes down, the rate of discount goes up, and the value of the contribution flow decreases.

In order to limit fluctuations in the balance ratio, which is the same as reducing fluctuations in the annual result of the pension system, the contribution flow included in the calculation of the contribution asset is smoothed. The method of smoothing is the same as in the calculation of the income index. Since the income index has a substantial impact on the development of the pension liability and thus on the denominator of the balance ratio, it is important that the contribution flow in the numerator of the balance ratio also follow the smoothing of the income index. To achieve this smoothing, the average contribution revenue for the last three years is calculated, and the resulting number is adjusted upward by the average annual percentage change in the contribution flow for the most recent three years, after the change in consumer prices during the same period has been eliminated from the calculation. Then the change in consumer prices for the most recent year is added back into the calculation. Moreover, and also to limit fluctuations in the balance ratio, the median of the turnover duration for the most recent three years is used in calculating the contribution asset.[5]

The assets of the National Pension Funds are valued at their so-called true value. This means that the assets are valued preferably at their latest price paid on the final trading day of the year, otherwise

[4]The calculation of turnover duration is described in Appendix B, Formula B.3.1.

[5]The Swedish Pensions Agency has shown that the smoothing made is inefficient and in some cases even counterproductive; see for example the report "Fördjupad analys av vissa beräkningsregler i inkomstpensionssystemet" (A Deeper Analysis of Certain Calculation Rules in the Inkomstpension System), February 25, 2013, on the home page of the Swedish Pensions Agency.

at their latest price bid. To limit variation, the mean value of the assets of the National Pension Funds for the last three years is used in calculating the balance ratio.

Valuation of Inkomstpension Liabilities

The liability of the inkomstpension to persons who have not begun to draw an old-age pension is valued as the sum of the pension balances of all insured persons. Income earned in the year covered by the accounts has not yet been confirmed at the time of the report. For this reason, an estimate of the inkomstpension credit earned in the year of the report is added to the sum of the pension balances of the insured. This added amount equals less than three percent of the total pension liability. The difference between estimated and confirmed pension credit is deducted in the accounts for the following year.[6]

The pension liability to retirees is calculated by multiplying the pensions granted (annual amount) by the expected number of years for which the amount will be disbursed. The number of years is discounted in order to reflect the indexation of disbursed amounts by the increase in the income index or balance index with a reduction of 1.6 percentage points. [7] The expected number of pay-out years is calculated from measurements of the pay-out period of pension amounts according to Swedish Pensions Agency records and is expressed in terms of so-called economic annuity divisors.[8] In economic annuity divisors consideration is given to any correlation between the size of pensions and the pay-out period.

One accounting principle followed is that the report is based only on events or transactions occurring and recorded. Since credit for the ATP will be earned through 2017, this accounting principle cannot yet be fully applied. The reason is that the ATP liability to persons who have not yet begun to receive their pensions cannot be determined without making assumptions about future economic and demographic developments. According to the Regulation (2002:135) for the Annual Report, the ATP liability for the economically active is therefore to be calculated on the basis of certain assumptions about future developments. That liability is to be calculated according to the principles set forth by the Government in Bill 2000/01:70 on Automatic Balancing in the Old Age Pension System. These principles provide that the liability to the economically active is to be calculated on the assumptions of the same life expectancy used in determining the inkomstpension liability and of two-percent annual growth in the income index.

On these conditions, the ATP liability as of December 31 of the year covered by the financial statements is calculated by estimating the ATP to be received at age 65 by each annual birth cohort. This amount is multiplied by the established economic annuity divisor of the accounting year for persons aged 65. It is assumed that persons older than 65 who have not yet drawn their full pension at the time of calculation will do so in the following year. The present value of the future pension amounts is then calculated through discounting it by the assumed annual change of two percent in the income index from the year of retirement until the year of the accounts. That amount is reduced by the similarly discounted value of the expected contribution inflow of individuals until age 64. Pension credit for income earned after that age is calculated entirely according to the provisions for the inkomstpension.

Valuation of Premium Pension Assets and Liabilities

Premium pension assets are reported at their true value, or accrued acquisition cost, according to the regulations and general guidelines of the Swedish Financial Supervisory Authority (FFFS 2009:12) on Annual Reports of Insurance Companies. Assets reported at their true value as of the balance sheet date are valued at their price on the last trading day of the year. In the valuation of assets reported at

[6]See Note 14, Table A.
[7]The recalculation of inkomstpension is made using the ratio between the new and old income index divided by 1,016. For those years when balancing is activated, the income index is replaced by the balance index.
[8]See formula B.6.4 in Appendix B.

accrued acquisition cost, the difference between acquisition cost and redemption price is periodized as interest revenue for the time remaining to maturity.

Temporary management consists of pension contributions paid in periodically during the year in which pension credit is earned; these are transferred to the premium pension system when the pension credit for the year has been confirmed. Assets under temporary management are reported at their accrued acquisition value.

Fund insurance assets refer to pension savers' investment in funds and are reported at the redemption price for fund assets. The pension liability for fund insurance consists of fund insurance assets and of liquid assets not yet converted into fund shares. Conventional insurance assets are invested in equity and interest funds and are reported at their true value.

The pension liability for conventional insurance is determined for each insurance policy as the capital value of the remaining guaranteed disbursements. That value is calculated on assumptions about future returns, life expectancy and operating expenses. The return is dependent on the market rates of interest on government bonds of varying maturities. The market rate of interest is determined on the basis of the time remaining to maturity for guaranteed disbursements. The market valuation of the liability means that provisions set aside for life insurance are affected by changes in interest rates. Paid-in premiums are reported as lump-sum premiums and increase the guaranteed amount. Assumptions about life spans are based on the population forecast of Statistics Sweden from 2012. Operating expenses are assumed to be 0.1 percent of the insurance capital. In total, this means that the guarantees in conventional insurance have been satisfactorily valued in accordance with generally accepted actuarial methods.

4 How the National Pension System Works

The principles of the inkomstpension and the premium pension are simple. A portion of your earnings each year is set aside in two different accounts. The pension is calculated on the basis of how much money you have in your accounts and how many years you are expected to live from the time when you start drawing your pension. The purpose of this section is to provide those who so desire with somewhat more advanced knowledge than these elementary basic premises.

Almost Like Saving at the Bank …

The national pension system works much like ordinary saving at the bank. The comparison applies to both earnings-related parts of the system, the inkomstpension and the premium pension. Each year pension contributions are paid by the insured, their employers and in certain cases the central government. Contributions are recorded as pension credit in the "bankbook" of the insured – i.e., the respective accounts for the inkomstpension and the premium pension. Savings accumulate over the years with the inflow of contributions and at the applicable rate of "interest". The statement sent out each year in the Orange Envelope enables the insured to watch their own inkomstpension and premium pension accounts grow from year to year. When the insured individual retires, the stream of payments is reversed, and the inkomstpension and premium pension are disbursed for the remaining lifetime of the insured.

… but Entirely a Form of Pension Insurance

With pension insurance savings are blocked; it is impossible to withdraw all or any part of them before the minimum age for receiving a pension. That age is 61 years for both the inkomstpension and the premium pension.

One purpose of pension insurance is to redistribute assets from individuals with shorter-than-average life spans to those who live longer. The pension balances of deceased persons – so-called inheritance gains (see Appendix A) – are redistributed each year to the surviving insured in the same birth cohort. Also after pension withdrawal begins, assets are redistributed from those with shorter-than-average life spans to those who live longer. This is done by basing monthly pensions on average life expectancy but paying them out as long as the insured lives. Consequently, total pension disbursements to persons who live for a relatively short time after retirement are less than their pension savings, and those who live longer than average receive more than the value of their own pension savings.

The balance of an insured's pension account consists of the sum of her/his pension credit (contributions), accrued interest and inheritance gains. A charge for administrative costs is deducted from the account each year.

One Krona of Pension Credit for Each Krona Contributed

The pension contribution is 18.5 percent of the pension base. The pension base consists of pension-qualifying income and pension-qualifying amounts. In addition to earnings, benefits from the social insurance and unemployment insurance systems are treated as income. Pension-qualifying amounts are a basis for calculating pension credit but are not income, properly speaking. Pension credit is

granted for pension-qualifying amounts for sickness and activity compensation (disability pension), years with small children (child-care years), and studies. Up until 2010, pension-qualifying amounts were also granted for compulsory national service. The maximum pension base is 7.5 income-related base amounts (SEK 424,500 in 2013). Pension credit is earned at 16 percent of the pension base for the inkomstpension and 2.5 percent for the premium pension.[1]

Who Pays the Contribution?

The insured pays an individual pension contribution to the national public pension of 7 percent of her/his earnings and any benefits received from the social insurance and/or unemployment insurance schemes. The contribution is paid on incomes up to 8.07 income-related base amounts[2] and is paid in together with the withholding tax on earnings. The individual pension contribution of 7 percent is not included in the pension base. Annual earnings are pension-qualifying when they exceed the minimum income for the obligation to file a tax return, which as from 2003 is 42.3 percent of the current price-related base amount.[3] When an individual's income has exceeded this threshold, it is pension-qualifying from the first krona.

For each employee, employers pay a pension contribution of 10.21 percent of that individual's earnings.[4] This contribution is also paid on earnings exceeding 8.07 income-related base amounts. Since there is no pension credit for earnings above 8.07 income-related base amounts, these contributions are in fact a tax. They are therefore allocated to the central-government budget as tax revenue rather than to the pension system.[5]

For recipients of pension-qualifying social insurance or unemployment insurance benefits, the central government pays a contribution of 10.21 percent of these benefits to the pension system. For persons credited with pension-qualifying amounts, the central government pays a contribution of 18.5 percent of the pension-qualifying amount to the pension system. These central government contributions to the old-age pension system are financed by general tax revenue.

The total pension contribution is thus 17.21 percent, whereas the pension credit and the pension contribution are 18.5 percent of the pension base. The reason for the difference is that the contribution base is reduced by the individual pension contribution of 7 percent when pension credit is calculated.[6] This means that the maximum pension base is 93 percent of 8.07, or 7.5 income-related base amounts. The maximum pension credit in 2013 was SEK 78,532.

Where Does the Contribution Go?

Of the pension contribution of 18.5 percent, 16 percentage points are deposited in the four buffer funds of the inkomstpension system: the First, Second, Third and Fourth National Pension Funds.[7] Each fund receives one fourth of contributions and finances one fourth of pension disbursements. The monthly pension disbursements of the inkomstpension system thus come from the buffer funds. In principle, the same moneys that were paid in during the month are paid out in pensions to retirees.

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[1] Pension credit for the premium pension may be transferred between spouses. Transferred pension capital is currently reduced by 8 percent, since more transfers are made to women than to men and women on average live longer than men.

[2] In 2013: 8.07 × 56,600 = SEK 456,762.

[3] In 2013: 0.423 × 44,500 = SEK 18,823. Under current rules, which provide for rounding up to the nearest SEK 100, pension credit is earned on incomes of SEK 18,900 or more.

[4] Self-employed persons pay a national pension contribution of 7 percent and self-employment charge of 10.21 percent.

[5] This tax was SEK 17.0 billion in 2013; see Note 1.

[6] 0.1721 / 0.93 ≈ 0.185

[7] In addition there is the Sixth National Pension Fund, which is an asset in the inkomstpension system but provides no contributions and pays no pensions.

The moneys allocated to the premium pension, 2.5 percent of the pension base, are invested in interest-bearing assets until the final tax settlement. Only then can it be determined how much pension credit for the premium pension has been earned by each insured. When pension credit has been confirmed, shares are purchased in the funds chosen by the insured. For those who have not chosen a fund, their moneys will be invested in the Seventh National Pension Fund, AP7 Såfa, the government pension management alternative based on birth cohorts, which has a generation-fund profile. At the turn of the year 2013/2014, there were 850 funds in the premium pension system, administered by 104 different fund management companies. With each disbursement of pensions, enough fund shares are sold to provide the monthly amount.

Funds in the Premium Pension System in 2013 and Capital Managed 2009-2013
December 31, billions of SEK

	Number of registered funds 2013	Managed capital 2009	2010	2011	2012	2013
Equity funds	588	179	214	159	193	240
Mixed funds	89	12	17	41	51	63
Generation funds	33	38	43	60	71	90
Interest funds	140	21	24	28	24	27
AP7 Såfa/Premium Savings Fund [1]		90	110	105	132	182
Total	**850**	**340**	**408**	**393**	**471**	**602**

1 The Premium Savings Fund was replaced by AP7 Såfa from May 2010. AP7 Såfa consists of one part AP7 Equity Fund and one part AP7 Interest Fund, which are registered as an equity fund and an interest fund, respectively, in the table above.

Interest on Contributions That Gave Rise to Pension Credit

Savings in a bank account earn interest, and the national public pension works in the same way. The interest on the inkomstpension account is normally determined by the growth in average income. Average income is measured by the *income index* (see Appendix A). The equivalent of interest on the premium pension account is determined by the change in the value of the premium pension funds chosen by the insured.

Thus, the interest earned on pension credit depends on the development of different variables in the general economy. The inkomstpension account earns interest at the rate of increase in incomes – in the price of labour, to put it another way. The development of the premium pension account follows the tendency on financial markets, which among other things reflects the price of capital. Neither of these rates of interest is guaranteed; they may even be negative. Through apportionment of contributions to separate subsystems where the rate of return depends on somewhat differing circumstances, risks are spread to some extent. The average return of the inkomstpension system (income-/balance index) has been 2.4 percent since 1995.[8] During the same period, the Premium Pension system has generated an annual rate of return of 5.1 percent.

A Rate of Interest Other Than the Income Index - Balancing

Under certain demographic and economic conditions, it is not possible to earn interest on the inkomstpension account and the inkomstpension at a rate equal to the growth in average income and at the same time to finance payments of the inkomstpension with a fixed contribution. In order to maintain

[8]Capital-weighted return. For further information, see the chapter Changes in the Value of the Pension System, section on Measures of Change in Value in the Premium Pension System.

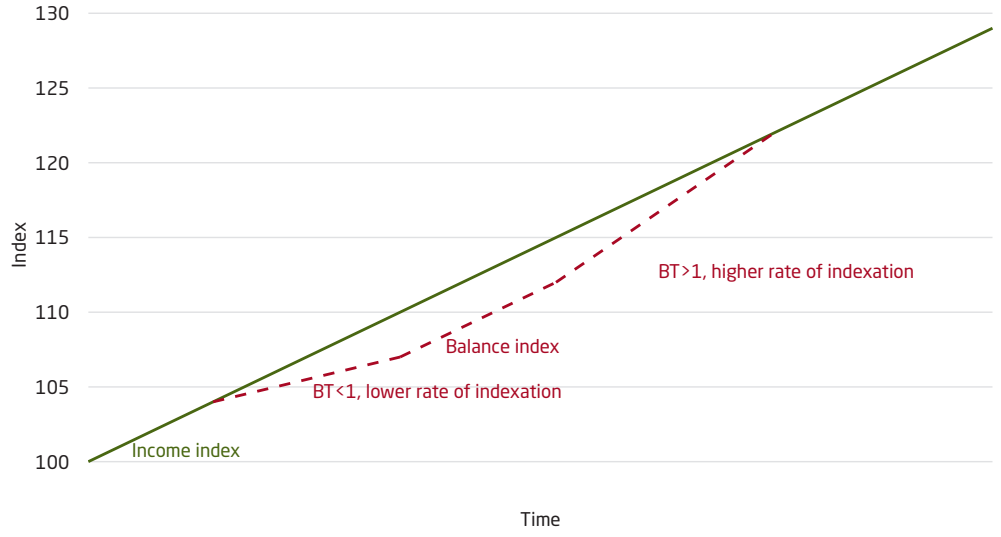
the contribution rate at 16 percent, income indexation must be suspended in such a situation. This is done by activation of balancing.

The assets of the system divided by the pension liability provides a measure of its financial position, a ratio referred to as the balance ratio (balanstal, BT). If the balance ratio is greater than the number one, assets exceed liabilities. If the balance ratio is less than one, liabilities exceed assets, and balancing is activated. When balancing is activated, pension balances and pensions are indexed by the change in a balance index instead of the change in the income index. The change in the balance index is determined by the change in the income index and the size of the balance ratio.

An example: If the balance ratio falls below 1.0000 to 0.9900 while the income index rises from 100.00 to 104.00, the balance index is calculated as the product of the balance ratio (0.9900) and the income index (104.00), for a balance index of 102.96. The indexation of pension balances is then 2.96 instead of 4 percent.[9] Indexation of pensions is reduced to the same extent.

If the balance ratio exceeds 1.0000 during a period when balancing is activated, pension balances and pensions will be indexed at a rate higher than the increase in the income index. When pensions regain the value that they would have had if they had been indexed only by the change in the income index – that is, when the balance index reaches the level of the income index – balancing is deactivated, and the system returns to indexation solely by the change in the income index.

Figure 4.1 Balancing



BT Balance ratio

Pensions Reduced by Costs of Administration

The costs of administering the inkomstpension are deducted annually from pension balances through multiplication of these balances by an administrative cost factor (see Appendix A). This deduction is made only until the insured begins to draw a pension. At current cost levels, the deduction for costs will reduce the inkomstpension by approximately 1 percent compared to what it would have been without the deduction.

[9]The balance index for the next year is calculated by multiplying the balance index (102.96) by the ratio between the new and the old income index, multiplied in turn by the new balance ratio.

Similarly, the costs of administration and fund management in the premium pension system are deducted from premium pension capital. In this case, however, the deduction continues to be made after the insured begins to draw a pension. The present cost deduction is 0.41 percent of premium pension capital per year. However, costs of administration are expected to decrease and the average deduction is estimated to be 0.28 percent for the next 31 years. At this level of costs, the deduction for administrative costs will reduce the premium pension by an average of about 8 percent from what it would have been without any cost deduction. In order to reduce the costs of pension savers, capital managers associated with the premium pension system are required to grant a rebate on the ordinary expenses of the funds. The rebates to pension savers in 2013 are equivalent to a reduction in fund management fees of about 0.61 percentage points. Without the rebates, pensions would be approximately 18 percent lower.

How is the Inkomstpension Calculated?

The inkomstpension is calculated by dividing the balance of the inkomstpension account by an annuity divisor (see Appendix A) at the time of retirement. Divisors are specific for each birth cohort and reflect remaining life expectancy when a pension is first withdrawn as well as an interest rate of 1.6 percent. Remaining life expectancy is an average for men and women. Owing to the interest of 1.6 percent, the annuity divisor is less than life expectancy, and the initial pension is higher than it would have been otherwise.

An example: An individual who retires at age 65 has a remaining life expectancy of about 19 years. The interest of 1.6 percent reduces the annuity divisor to 16. If the individual has an inkomstpension account of SEK 2.5 million, he/she will receive an inkomstpension of SEK 156,250 per year (SEK 2.5 million/16), or SEK 13,020 per month.

The inkomstpension is recalculated annually according to the change in the income index after deducting the interest of 1.6 percentage points credited in the annuity divisor, so-called adjustment indexation.[10] This means that if the income index increases by exactly 1.6 percent more than inflation, as measured by the Consumer Price Index, pensions will increase at exactly the same rate as inflation. If the income index increases by more than 1.6 percent above the inflation rate, pensions will rise in constant prices, and vice versa. When balancing is activated, the income index is replaced by the balance index when pensions are recalculated.

How Is the Premium Pension Calculated?

The premium pension can be drawn as either conventional insurance or fund insurance.

In both forms of insurance, the value of the pension account is divided by an annuity divisor, in the same way as with the inkomstpension. But for the premium pension, unlike the inkomstpension, the annuity divisor is based on forecasts of future life expectancy. Interest is currently credited at 2.9 percent both in conventional insurance and in fund insurance, after a cost deduction of 0.1 percent from the so-called advance interest rate.

If the premium pension is drawn in the form of conventional insurance, the pension is calculated as a guaranteed life-long annuity payable in nominal monthly instalments. The fund shares of the insured are sold, and the Swedish Pensions Agency assumes responsibility for the investment as well as the financial risk. The pension is calculated to provide an assumed nominal return that is presently -0.1 percent after the deduction for costs. The amounts disbursed may be greater because of so-called rebates if the conventional life-insurance operation reports a positive result (see Appendix A).

Fund insurance means that the pension savings remain in the premium pension funds chosen by the insured. With fund insurance, the amount of the premium pension is recalculated once each year based on the value of fund shares in December. In each month of the following year, a sufficient number of

[10]The inkomstpension is recalculated as the ratio between the new and the old income index divided by 1.016. In years for which a balance ratio has been set, the income index is replaced by the balance index.

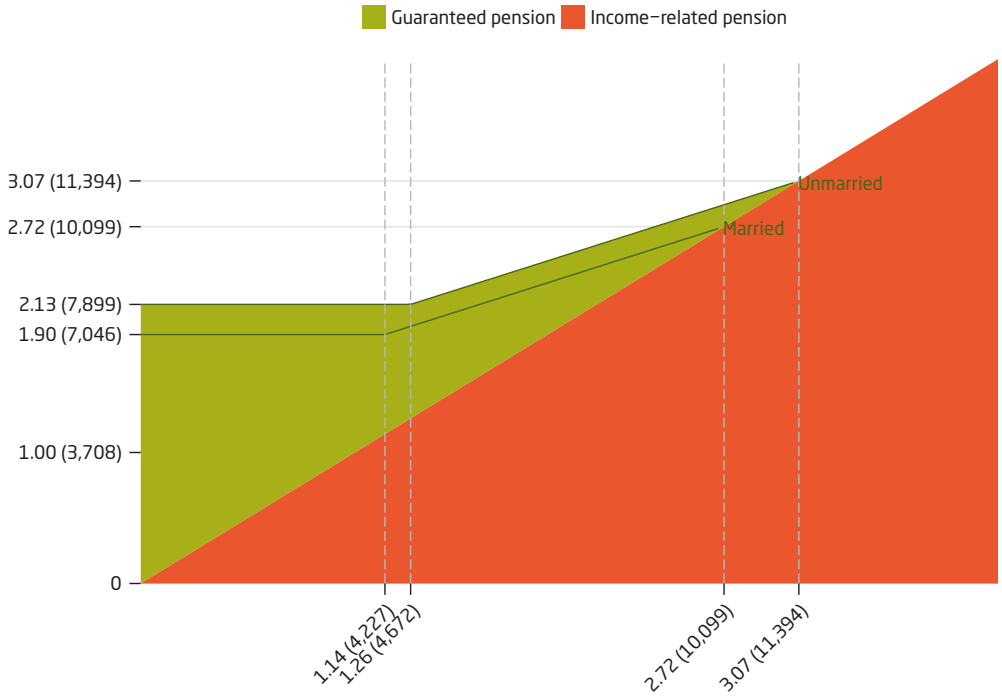
fund shares are sold to finance payment of the calculated premium pension. If the value of the fund shares increases, fewer shares are sold; if it decreases, more shares are sold. Variations in prices of fund shares affect the value of the following year's premium pension.

The premium pension may include a survivor benefit for the period of disbursement. This means that the premium pension will be paid to either of two spouses or cohabitants as long as one of them survives. If the insured elects to include a survivor benefit, the monthly pension will be lower, as the expected pay-out duration of the premium pension will then be longer.

Guaranteed Pension[11]

The guaranteed pension provides basic social security for individuals with little or no income. Residents of Sweden are eligible for a guaranteed pension beginning at age 65. To receive a full guaranteed pension, an individual must in principle have resided in Sweden for 40 years after age 25. Residence in another EU/EEA country is also credited toward a guaranteed pension.

Figure 4.2 Income-related Pension and Guaranteed Pension



Annual pension in price-related base amounts (monthly pension in SEK, 2013)

In 2013 the maximum guaranteed pension for a single pensioner was SEK 7,899 per month (2.13 price-related base amounts[12]) and for a married pensioner SEK 7,046 per month (1.90 price-related base amounts). The guaranteed pension is reduced for persons with an earnings-related pension. The reduction is taken in two steps: for low incomes, the guaranteed pension is decreased by the full amount

[11] These provisions concern the guaranteed pension for persons born in 1938 or later. For older individuals, other rules apply.

[12] In 2013 the price-related base amount was SEK 44,500.

of the earnings-related pension; for higher incomes, the guaranteed pension is decreased by only 48 percent. This means that a single pensioner with a monthly earnings-related pension of SEK 11,394 or more received no guaranteed pension in 2013. For a married pensioner the corresponding income limit was SEK 10,099.

An example: A pensioner living alone has an earnings-related pension equivalent to 2.26 price-related base amounts. The guaranteed pension is first reduced by the full amount of income up to 1.26 price-related base amounts. The remainder of 0.87 price-related base amount [=2.13-1.26] is reduced by 48 percent of the income above 1.26 price-related base amounts, or by 0.48 price-related base amount, which in this example gives a guaranteed pension of 0.39 price-related base amount [=0.87-0.48*(2.26-1.26)]. The total inkomstpension and guaranteed pension will then be 2.65 price-related base amounts [0.39+2.26].

When the guaranteed pension is calculated, the premium pension is disregarded. Instead, the inkomstpension is calculated as if it had been earned at 18.5 percent of the pension base, rather than 16 percent. One reason for these provisions is that they simplify administration of the guaranteed pension.

The guaranteed pension is financed by the tax revenue of the central-government budget and is therefore not included in the income statement and balance sheet of the pension system.

ATP

Persons born before 1938 have not earned either an inkomstpension or a premium pension. Instead they receive the ATP, which is calculated by pre-existing rules. The level of the ATP pension is based on an individual's income for the 15 years of highest income, and 30 years with income are required for a full pension.

For persons born in 1938–1953, there are special transitional provisions. These individuals receive a portion of their earnings-related old-age pension as an ATP and the rest as an inkomstpension and a premium pension. The younger the individual, the smaller the proportion of ATP. Persons born in 1938 receive 80 percent of their ATP; those born in 1939 receive 75 percent of their ATP, etc. There is an additional guarantee that the pension received will not be less than the ATP earned by the individual through 1994 – the year of the decision in principle to adopt the pension reform. Those born in 1954 or later earn their entire pensions under the provisions for the inkomstpension and the premium pension.

For pension withdrawals before the year when the individual turns 65, the ATP is price-indexed. If the balancing is activated the year when the individual reaches age 65, the ATP is recalculated according to special rules. The month when the person reaches age 65, the ATP is recalculated by multiplication by all the balance ratios that have been set during that balance period. From the following year, the ATP is adjustment-indexed in the same manner as the inkomstpension.

Proportion Granted a National Pension at Ages 61-75 *

percent

Birth cohort	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
1938	3.6	2.3	2.3	2.1	77.3	4.1	3.2	0.8	0.3	0.3	0.1	0.1	0.1	0.1	0.0
1939	3.9	1.9	2.1	2.3	75.6	6.5	2.3	0.8	0.3	0.3	0.2	0.1	0.1	0.1	
1940	3.0	2.1	2.5	3.1	75.8	5.0	2.6	0.8	0.4	0.5	0.2	0.1	0.1		
1941	2.9	2.2	3.0	3.7	73.2	6.3	2.8	0.8	0.5	0.4	0.2	0.1			
1942	3.4	2.9	3.4	3.9	70.9	6.2	3.4	1.2	0.5	0.4	0.2				
1943	4.0	3.1	3.6	5.3	66.4	7.1	4.4	1.2	0.4	0.5					
1944	4.7	3.4	4.7	5.9	63.2	7.9	4.0	1.1	0.5						
1945	5.1	4.2	5.3	6.1	61.7	7.2	4.0	1.3							
1946	6.0	4.8	5.5	6.7	59.4	6.7	4.3								
1947	6.4	4.6	6.0	7.5	57.2	7.0									
1948	6.1	5.0	6.7	7.9	55.4										
1949	5.9	5.5	7.0	8.8											
1950	5.9	5.5	7.8												
1951	6.6	6.4													
1952	6.9														

* The proportions are for new retirees in relation to the potential number of retirees as of December 2013. Ages are as of December 31 of the year when the pensioner began drawing an inkomstpension/guaranteed pension.

The National Pension System in 2013 - in Illustrations and Figures

This section describes the pension system in figures. Figures that show pension credit acquisition and pensions, Figures 4.3–4.7, have been calculated on the basis of all 5,500,300 individuals who earned pension credit in 2012. Pension credit attributed to 2013 pension accounts refers to incomes earned in 2012.

Incomes, Pension Credit and Pension Disbursed

In Figure 4.3 it can be seen that the average income rises until about age 45, or more correctly, up to the birth cohort that reached age 45 in 2013. For subsequent ages or birth cohorts the average income is more or less the same as for 45-year-olds until around age 60, after which it falls sharply. One reason for the drop is the increase in the proportion of persons with sickness compensation (disability pensioners) with lower average incomes. Another reason for the drop in average income is that certain individuals have reduced their work hours, or have fully retired during the year.

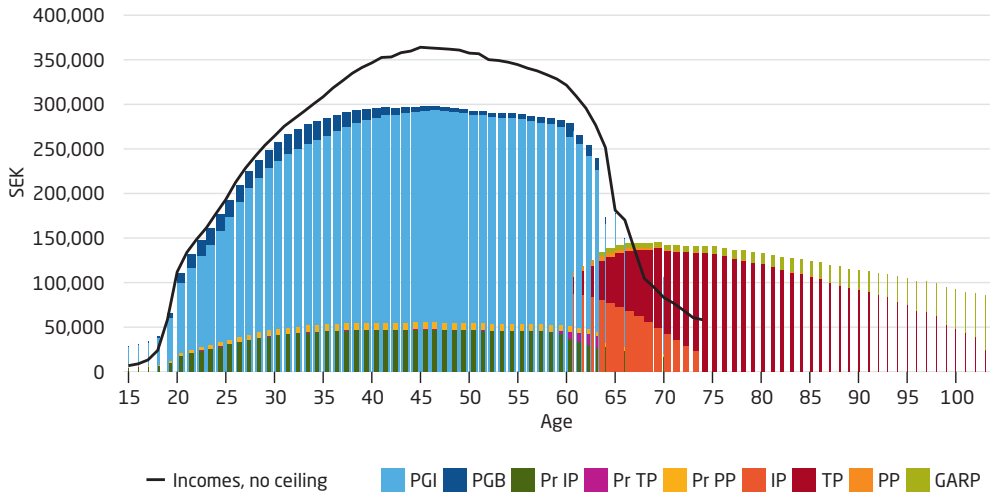
The importance of the ceiling on the earning of pension credit is shown in the figure – the average pension-qualifying income (pensionsgrundande inkomst, PGI) would follow the line for *incomes with no ceiling* if there had not been any ceiling.

The proportion of the margin for earnings, 17.21 percent, used for the contribution to the inkomstpension and the premium pension, respectively, is shown in the bars of the graph.

The figure provides general information on the level of compensation for the 2,052,687 people who in December 2013 had received benefits from the national pension system. It also shows that current pensioners for the most part have had their pensions calculated according to the rules for ATP. Furthermore, the importance of the guaranteed pension is evident, particularly for older birth cohorts. In addition, it is shown that the inkomstpension has begun to replace the ATP for birth cohort 1938 and subsequent cohorts. The growing importance of the premium pension is not shown as clearly – but this development is also part of the picture.

The width of the bars reflects the number of people in the annual cohort, with cohort 1947 as the norm.

Figure 4.3 Average income, pension credit earned and pension disbursed



PGI	Pension-qualifying income	Pr TP	Pension credit, ATP	TP	ATP
PGB	Pension-qualifying amounts	Pr PP	Pension credit, premium pension	PP	Premium pension
Pr IP	Pension credit, inkomstpension	IP	Inkomstpension	GARP	Garanteed pension

Figure 4.4 Average income, pension credit earned and pension disbursed, women

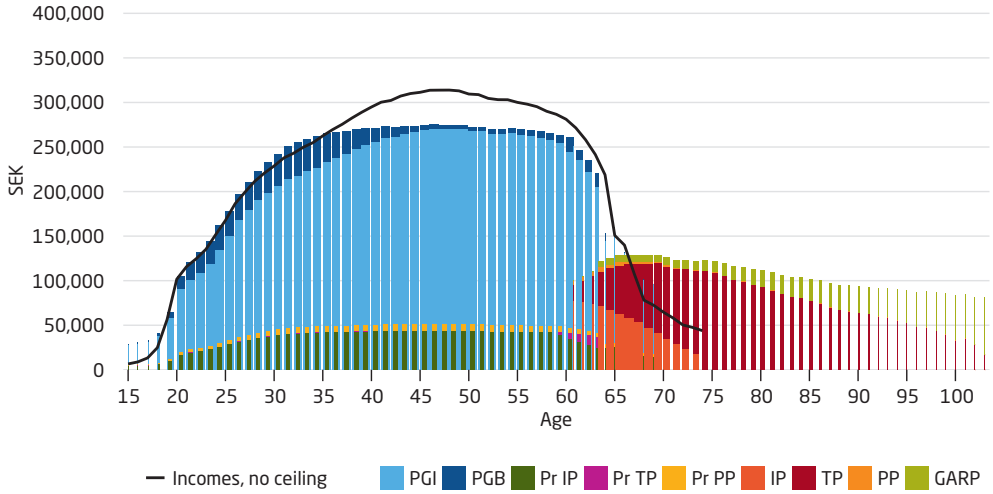
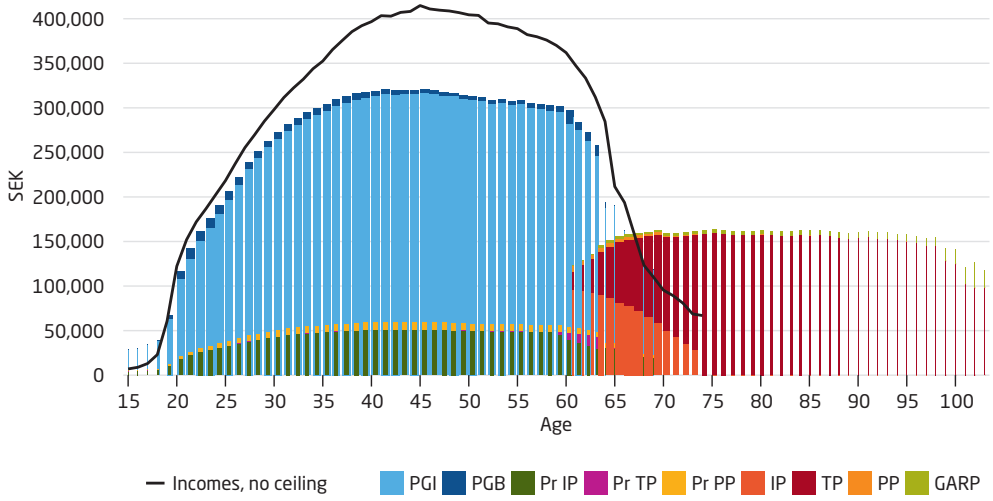


Figure 4.5 Average income, pension credit earned and pension disbursed, men

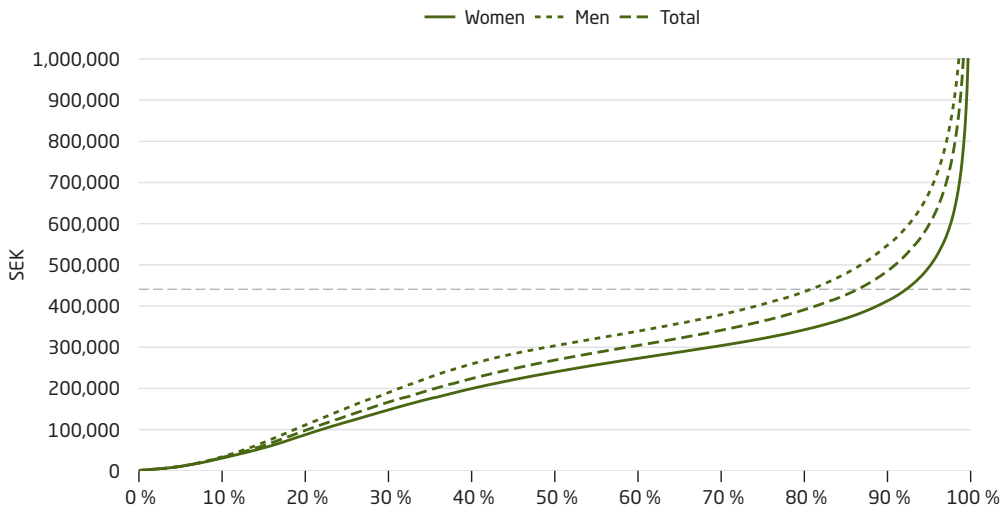


Figures 4.4 and 4.5 show that women on average have lower incomes than men. We also see that the ceiling on pension-qualifying income has a greater negative influence for men than for women, since a larger share of men's incomes are above the ceiling. It can be seen, further, that women receive more of the pension-qualifying amounts than do men – more details about pension-qualifying amounts can be found in Figure 4.8. Moreover, women on average have lower pensions and considerably more guaranteed pensions than men.

Earned Income

Figures 4.6 and 4.7 below show earned income divided between women and men. Incomes up to 8.07 income-related base amounts (SEK 440,600 for income year 2012) form the base for the national pension. The diagram below shows incomes for the income year 2012 divided up in rising order (in total 5,336,000 persons, of which 2,618,000 women and 2,718,000 men). Of these, those with incomes below the ceiling numbered 4,551,000 persons (2,398,000 women and 2,153,000 men).

Figure 4.6 Earned Income for Women and Men, Income Year 2012



Refers to tax-assessed earned income (wages and salaries, income from active and passive business operations, sickness cash benefits, parental allowances, sickness and activity compensation, unemployment compensation etc.). The income is before deduction of the individual pension contribution and is shown for persons with incomes above the minimum for the obligation to file a tax declaration, 42.3 percent of the price-related base amount. The horizontal line at SEK 440,600 designates the ceiling on contributions.

Roughly 565,000 men, or 21 percent of men, had an income above the ceiling on pension-qualifying income. The corresponding proportion for women was 8 percent or approximately 220,000 women. The table below shows the average tax-assessed earnings and pension-qualifying income for women and men. From the table it can be seen that women's incomes are lower than men's (76 percent of tax-assessed income and 84 percent of pension-qualifying income).

Average Earned Income and Pension-Qualifying Income, Income Year 2012
SEK

	Tax-assessed earned income	Pension-qualifying income
Women	238,200	226,600
Men	311,800	271,200
Total	**275,700**	**249,300**

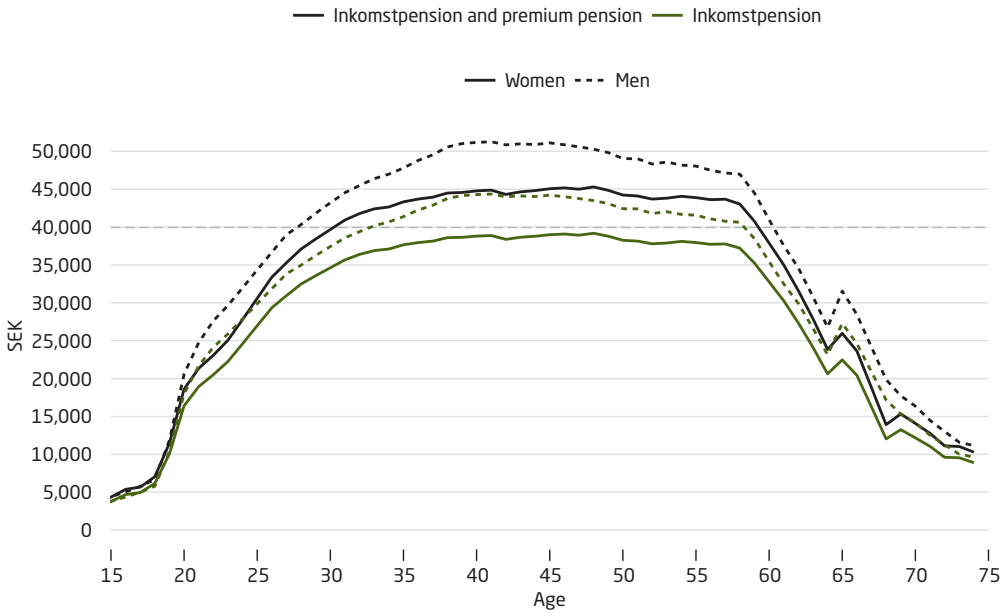
Pension Credit for the Inkomstpension and the Premium Pension

In 2013, the average allocated pension credit for inkomstpension and premium pension was SEK 39,900 – lower for women (SEK 37,800) and higher for men (SEK 42,000); see the table below.

Average Pension Credit Earned, 2012
SEK

	Inkomstpension	Premium pension	Total
Women	32,800	5,000	37,800
Men	36,400	5,600	42,000
Total	**34,600**	**5,300**	**39,900**

Figure 4.7 Average Pension Credit Earned, Women and Men, 2012



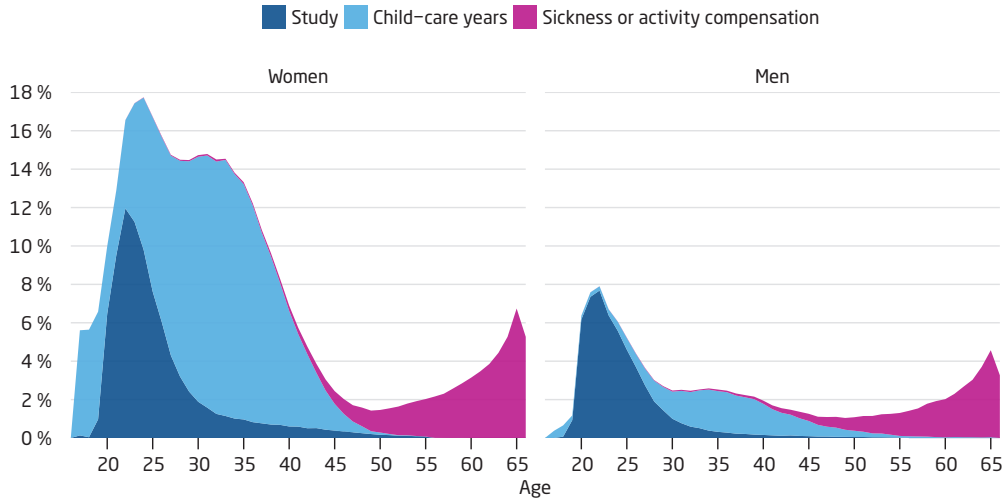
The horizontal line at SEK 39,900 shows the average for all individuals.

From the table and the figure above it can be seen that the average amount is approximately 10 percent less for women than for men. The average earned pension credit for inkomstpension and premium pension increases somewhat from age 64 to 65 (age at year-end). That is because at age 65 and later, the total income base is included in the inkomstpension and premium pension system. Before age 65, these cohorts have a certain proportion of their income-qualifying old age pension in the form of ATP and the remaining proportion in the form of inkomstpension and premium pension (twentieth-part phasing-in).

Pension-Qualifying Amounts

Credit is granted for pension-qualifying amounts in particular phases of individuals' lives, such as years with small children or of studies. In 2013 pension-qualifying amounts constituted 7 percent of the allocated pension base for women and approximately 2 percent for men. The largest portion for women, 4 percent, consisted of amounts for years with small children. For men sickness and activity compensation accounted for the largest share, or just less than 1 percent of the entire pension base. Viewed over a life cycle, pension-qualifying amounts are received by younger people for study and years with children, and later in life amounts are received for sickness compensation.

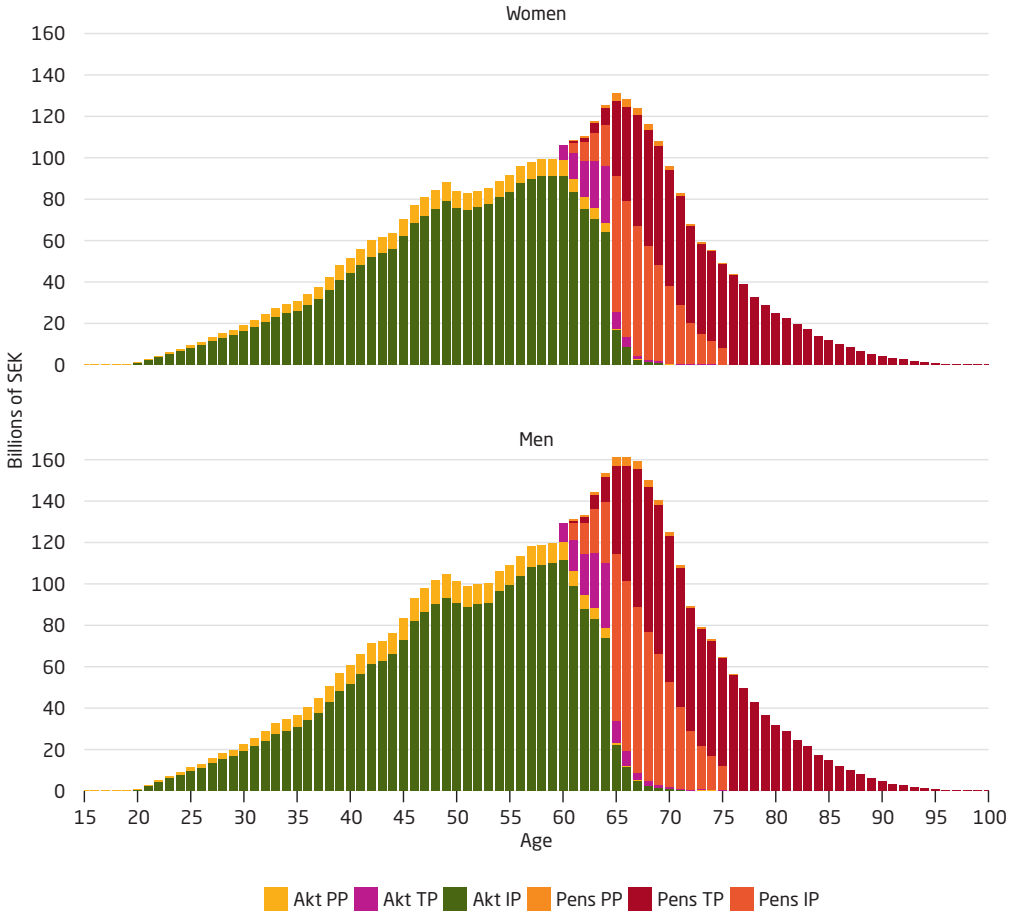
Figure 4.8 Pension-Qualifying Amounts, Income Year 2012
percent of pension base



Pension Liability

The pension liability – the pension capital of the insured – in the inkomstpension and the premium pension system was SEK 8,697 billion as of December 31, 2013. This liability, divided between women and men and for every age from 15 to 100, is shown in Figure 4.9. It can be seen that the pension capital is less for women than for men. It is also evident that supplementary pension (ATP) is the principal pension asset for current pensioners, but the ATP will soon disappear completely for the economically active birth cohorts. The year 2017 is the last one when ATP credit can be earned – and the amounts earned will be very small. For the economically active, the inkomstpension will be the predominant pension, while at the same time the growing importance of the premium pension can be detected. If it is assumed that the individual's first earnings come at around age 20, all who were 38 years old or younger in 2013 have earned inkomstpension and premium pension credit after the allocations began in 1995. Those who are older than this have not earned premium pension credit for their entire economically active lives, but have instead earned more credit for their inkomstpension.

Figure 4.9 Pension liability, women and men, at year-end 2013



Akt PP	Premium pension, economically active	Pens PP	Premium pension, retirees
Akt TP	ATP, economically active	Pens TP	ATP, retirees
Akt IP	Inkomstpension, economically active	Pens IP	Inkomstpension, retirees

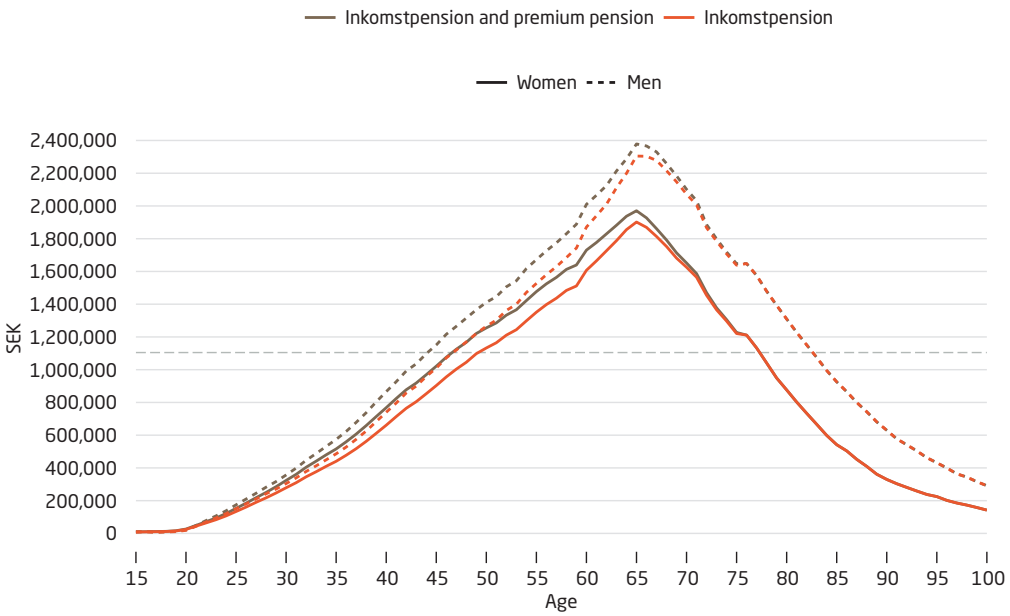
Average pension liability (the sum of all years of earned pension credit for inkomstpension and premium pension) amounted to SEK 1,092,996 at the end of 2013. Women's average pension liability is 83 percent av men's. See the table below.

Average Pension Liability
SEK

	Inkomstpension	Premium Pension	Total
Women	930,700	85,900	999,696
Men	1,124,500	100,300	1,207,564
Total	**1,028,600**	**93,300**	**1,104,703**

The table shows that the premium pension share of total pension liability is 8.5 percent. For women, the corresponding share is marginally higher than for men (0.26 percentage points).

Figure 4.10 Average Pension Liability, 2013



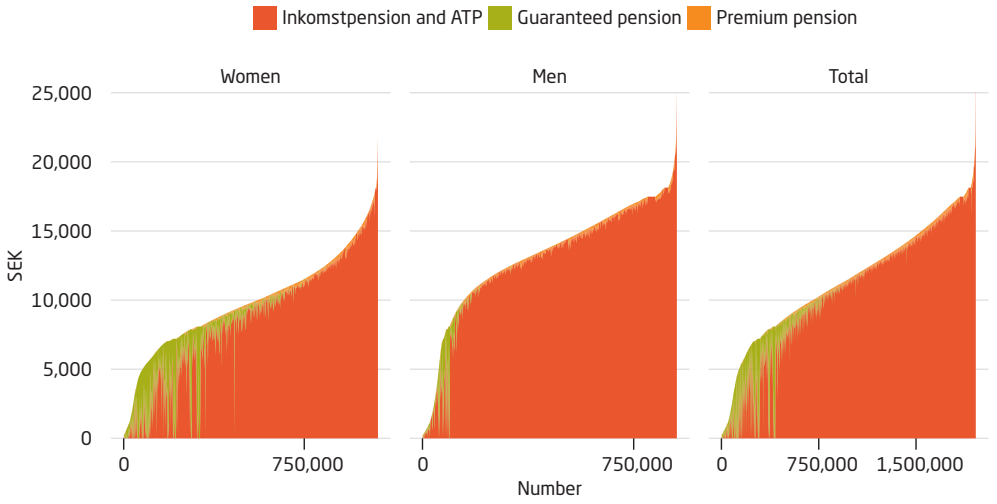
The horizontal line at SEK 1,104,703 shows the average for all individuals.

The figure above shows that average liability increases with increasing age up to and including the age of 65. After that, liability decreases, since many have entered retirement.

Pension Disbursements

In the figures below the disbursements of the national pension in December 2013 for men and women born in 1948 or earlier are shown in rising order of size (1,099,600 women and 953,100 men). For total pensions disbursed during 2013, see Note 2 in the chapter Notes and Comments.

Figure 4.11 Pension Disbursements, Women and Men, December 2013



The difference in level and composition of different parts of pensions for men and women is the most striking feature of the figure. The average pension for women – income-based pension and guaranteed pension – was SEK 9,700; the corresponding amount for men was SEK 13,000. Of women's national pensions, 89 percent consisted of income-based pensions and 11 percent of guaranteed pensions – however, a full 60 percent of women had some portion of guaranteed pension. The diagram does not show why the proportion with a guaranteed pension increases sharply with age. Of the national pension for men, 98 percent consisted of an income-based pension and 2 percent of a guaranteed pension. A total of 16 percent of men had some proportion of guaranteed pension. Neither the widow's pension, which is paid only to women, nor the housing supplement, which is paid primarily to women, is included in the figure.

The pattern that emerges from the figure – with row upon row of people who receive only a guaranteed pension – is clearest in the case of one group, consisting mostly of women, that receives a maximum guaranteed pension, that is, 40/40th's of the guaranteed pension. This explains the concentration of green at the maximum guaranteed pension for married persons (SEK 7,046 per month in 2013) and for unmarried persons (SEK 7,899 per month). Those with a lower guaranteed pension, but also those without any income-based pension, have fewer years of residence in Sweden. Only persons born 1938 or later can have any share of premium pension – and it has then been earned only since 1995 – the impact of the premium pension is thus still so limited that it is difficult to detect in the figure. The importance of the premium pension is growing, though, with each new annual cohort that begins to draw a pension. The few individuals with a national pension exceeding SEK 20,000 per month have reached that pension level in part by postponing pension withdrawal. The maximum public pension paid in 2013 was SEK 32,100 per month.

5 Costs of Administration and Capital Management

The income statements of the inkomstpension and the premium pension show the costs reported by the Swedish Pensions Agency and the National Pension Funds in their own income statements as "costs reported gross." The capital management costs of the National Pension Funds and the premium pension system that are reported "net,"[1] that is, against revenue or as a lower return on funds, are not shown directly in the income statement of the pension system.

In this section, costs reported gross and costs reported net are compiled, as are transaction costs that can only be captured partly in the accounts of the National Pension Funds and the Swedish Pensions Agency. The purpose is to provide as full a picture as possible of the total costs of the old-age pension system. It is important to keep in mind that the costs reported net in this section, as well as transaction costs, have already had a negative impact on the National Pension Funds.

As far as the insured are concerned, the effects of costs reported net differ for the premium pension and for the inkomstpension. In the premium pension system these costs decrease either the return or the premium pension account through a deduction for costs. Thus costs reduce assets and thereby the future premium pension of the insured. On the other hand, the costs reported net by the National Pension Funds are not included in the costs deducted from the pension account. Rather, the costs of the National Pension Funds reported net affect the assets and return of those funds directly. Since only system assets, not liabilities, are reduced by these costs, their impact on the result of the system is negative. This means that the balance ratio is negatively affected. However, as the costs reported net are very minor in relation to the pension liability, the impact on the balance ratio is quite limited. When balancing is activated, the costs reported net affect the indexation of inkomstpensions and inkomstpension capital.

Accounting for Total Costs

The total cost of insurance administration and capital management for the pension system, in addition to other charges, amounted to SEK 5.4 billion, of which SEK 2.0 billion is reported in the income statement of the pension system. The SEK 2.0 billion is the sum of insurance administration (SEK 1,179 million) and the operating expenses of the National Pension Funds (SEK 820 million). See the table Total Costs and Charges of the Old-Age Pension System.

For the inkomstpension, the costs reported in the income statement for 2013 were SEK 1,629 million, of which SEK 829 million are for insurance administration and SEK 820 million are for operating expenses of the National Pension Funds. In addition to the SEK 829 million in operating expenses, the National Pension Funds had fixed management fees of SEK 679 million. The sum of reported capital management costs shown in the income statements of the National Pension Funds was thus SEK 1,499 million. Performance-based fees and transaction costs, such as brokerage, are not reported as direct costs of the National Pension Funds, but instead negatively affect the rate of return. Performance-based fees are not an ordinary cost of administration but a way for the National Pension Funds to share risk and return with their outside managers. In total the National Pension Funds paid SEK 315 million

[1]The concept of costs reported net is used here for the costs which consist of fixed management fees in the accounts of the National Pension Funds and which in the accounts of the premium pension system represent the net of the items referred to as administrative costs and rebates on administrative costs.

in performance-based fees and SEK 209 million in brokerage and other transaction costs. When these costs and charges are included, the total costs of the inkomstpension are SEK 2,852 million.

The Swedish Pensions Agency's income statement of the premium pension system shows that administrative costs were SEK 363 million. That sum does not include SEK 8 million for costs of traditional insurance. This cost is reported net through reduction of the return on funded capital (see Note 17). The total costs of insurance administration for the premium pension are thus SEK 350 million; see the item Total Insurance administration in the table below. As for the premium pension system, the item Fixed management fees refers to fees charged by the premium pension funds after rebates have been returned to premium pension savers. The fees totalled SEK 1,646 million. As the rebates were SEK 3,219 million, the fee before rebates was SEK 4,865 million. In addition to the SEK 1,646 million in fixed management fees, the sum of capital-management expenses and charges consists of SEK 527 million in transaction costs. As with the corresponding item for the inkomstpension, this amount does not represent complete reporting of all transaction costs. The total capital management costs of the premium pension have reduced the return (see Note 16).

Costs and Charges of the Old-Age Pension System, 2013
millions of SEK

	Inkomstpension	Premium pension	Total
Insurance administration			
Collection of contributions, etc. (Swedish Tax Agency)	380	59	439
Pension administration [1]	449	291	740
Total Insurance administration	**829**	**350**	**1,179**
Capital management costs and charges			
Reported capital management costs	1,499	1,646	3,145
Operating expenses of the National Pension Funds (reported gross)	820		820
Fixed management fees (reported net)	679	1,646	2,325
Performance-based fees [2]	315		315
Transaction costs [3]	209	527	736
Total Capital management costs and charges	**2,023**	**2,173**	**4,196**
Total	**2,852**	**2,523**	**5,375**

1 The amount for the inkomstpension refers to actual cost, whereas the amount in Note 4 refers to the compensation paid by the National Pension Funds for costs of administration.
2 This item represents fees that the National Pension Funds pay only if a particular manager achieves a certain agreed result.
3 Transaction costs refer to brokerage and clearing fees charged on the stock and derivatives market. These charges are included directly in the transaction and have a negative effect on the return earned by the funds. Interest and foreign-currency transactions are paid for through the difference between buying and selling prices and thus cannot be reported as a separate charge. Premium pension: The costs included here are only those of the funds that report the so-called total cost share (TCS) to the Swedish Pensions Agency. These funds account for roughly 84 percent of the capital in the premium pension system. The amount also includes costs of interest and coupon (dividend) taxes in the funds.

Development of Costs 2008-2012

To provide a perspective on costs, the tables and the diagram below show cost items for each year beginning with 2009. Costs are reported in millions of SEK and in SEK per number of insured, that is, the number of persons with a pension account, including pensioners.

Costs of the Inkomstpension

millions of SEK

	2009	2010	2011	2012	2013
Insurance administration					
Collection of contributions, etc. (Swedish Tax Agency)	378	402	377	380	380
Pension administration [1]	519	568	506	491	449
Total Insurance administration	**897**	**970**	**883**	**871**	**829**
Capital management costs and charges					
Reported capital management costs	1,297	1,297	1,228	1,351	1,499
Operating expenses of the National Pension Funds (reported gross)	808	820	791	845	820
Fixed management fees (reported net)	489	477	437	506	679
Performance-based fees	170	368	241	209	315
Transaction costs [2]	208	186	179	192	209
Total Capital management costs and charges	**1,675**	**1,851**	**1,648**	**1,752**	**2,023**
Total	**2,572**	**2,821**	**2,531**	**2,623**	**2,852**

1 The amount for the inkomstpension refers to actual cost, whereas the amount in Note 4 refers to the compensation paid by the National Pension Funds for costs of administration.
2 See the explanation in the table Total Costs and Charges of the Old-Age Pension System

Costs of the Premium Pension

millions of SEK

	2009	2010	2011	2012	2013
Insurance administration					
Collection of contributions, etc. (Swedish Tax Agency)	59	63	59	59	59
Pension administration	284	283	281	307	291
Total Insurance administration	**343**	**346**	**340**	**366**	**350**
Capital management costs and charges					
Reported capital management costs	829	1,141	1,155	1,371	1,646
Fixed management fees (reported net)	829	1,141	1,155	1,371	1,646
Transaction costs	565	663	645	635	527
Total Capital management costs and charges	**1,394**	**1,804**	**1,800**	**2,006**	**2,173**
Total	**1,737**	**2,150**	**2,140**	**2,372**	**2,523**

Figure 5.1 Insurance Administration, Inkomstpension

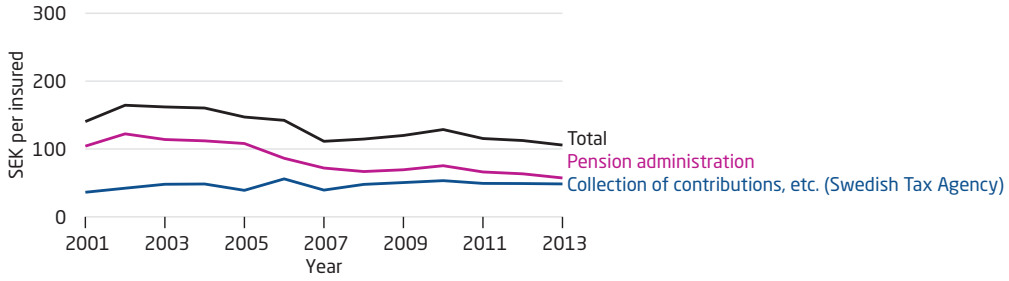


Figure 5.2 Insurance Administration, Premium Pension

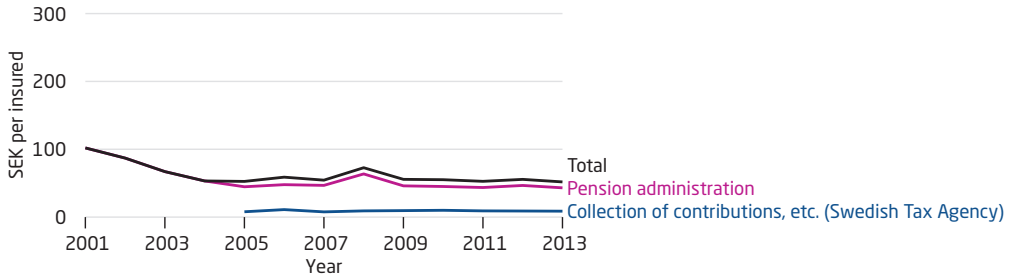


Figure 5.3 Capital management costs and charges, Inkomstpension

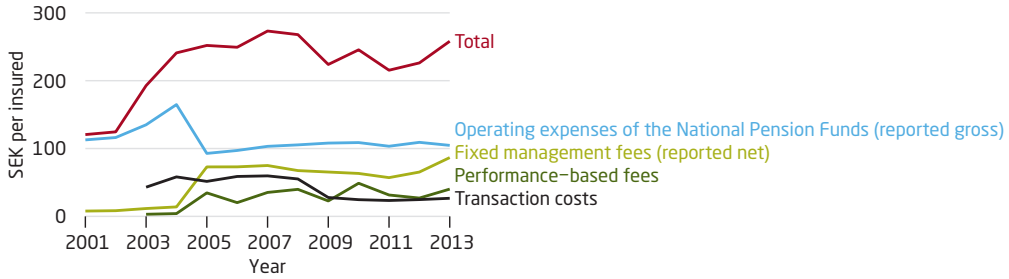
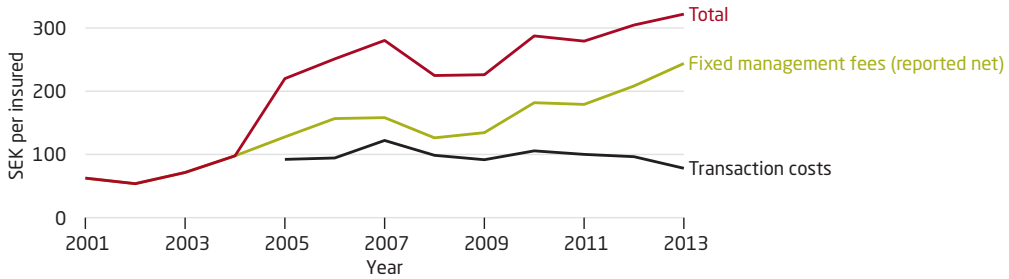


Figure 5.4 Capital management costs and charges, Premium Pension



The above tables show that inkomstpension costs have increased somewhat over the past year. Premium pension costs have also increased somewhat from 2012 to 2013. The development of capital management costs and fees largely depends on how average managed capital develops.

There are a number of cost items within insurance administration that are common to inkomstpension and premium pension. Examples are the production and distribution of the Orange Envelope, and the Swedish National Tax Board's reimbursement for tax collection, etc. Such costs are spread between the various branches of insurance in proportion to the number of insurees, volume of fees or other distribution key. Capital management costs for inkomstpension refer to the First–Fourth National Pension Funds and the Sixth National Pension Fund. Capital management costs for premium pension are mainly fees charged by the premium pension funds, including the Seventh National Pension Fund, after rebates. Since fund fees stand at roughly 0.3 percent, management costs in SEK increase when premium pension capital increases.

Capital Management Costs in Relation to Capital Managed

The capital management costs of the inkomstpension are the costs of the First–Fourth and Sixth National Pension Funds. The capital management costs of the premium pension refer to the fees that the premium pension funds, including the Seventh National Pension Fund, have deducted after rebates, as well as the capital management costs of the premium pension system for conventional life insurance. The economies of scale for the four major National Pension Funds in the inkomstpension system are clearly apparent from the table below. In 2013 the total capital management costs for these funds and for the much smaller Sixth National Pension Fund was 0.15 percent of the capital managed. The performance-based fees of the National Pension Funds were 0.03 percent, and transaction costs were 0.02 percent; thus, total capital management costs and charges amounted to 0.20 percent of the capital managed. The capital management costs reported for the much smaller and more numerous funds in the premium pension system were 0.31 percent, transaction costs were 0.10 percent; the total of capital management costs and charges was thus 0.41 percent of the capital managed. However, the differences in costs are due not only to disparity in economies of scale, but also to the fact that the funds of the inkomstpension invest about 35 percent of their capital in bonds or similar assets with lower costs of administration relative to stocks. In the premium pension system, only about 7 percent of total assets are invested in holdings of this type.

Average capital managed
billions of SEK

	2009	2010	2011	2012	2013
Inkomstpension	767	861	884	915	1,008
Premium pension	270	353	385	429	527

Capital Management Costs in Relation to Capital Managed

percent

	2009	2010	2011	2012	2013
Inkomstpension					
Reported capital management costs	0.17	0.15	0.14	0.15	0.15
Operating expenses of the National Pension Funds (reported gross)	0.11	0.10	0.09	0.09	0.08
Fixed management fees (reported net)	0.06	0.06	0.05	0.06	0.07
Performance-based fees	0.02	0.04	0.03	0.02	0.03
Transaction costs	0.03	0.02	0.02	0.02	0.02
Total Inkomstpension	**0.22**	**0.21**	**0.19**	**0.19**	**0.20**
Premium pension					
Reported capital management costs	0.31	0.32	0.30	0.32	0.31
Fixed management fees (reported net)	0.31	0.32	0.30	0.32	0.31
Transaction costs	0.21	0.19	0.17	0.15	0.10
Total Premium pension	**0.52**	**0.51**	**0.47**	**0.47**	**0.41**

Actual Cost Deductions Taken 2009-2013

In 2013 the deduction from pension balances for costs was 0.03 percent. The deduction for costs is made only up to the time pension disbursement begins. Neither the fixed management fees of 0.07 percent of capital managed, the performance-based fees of 0.03 percent of capital managed, nor the transaction costs of 0.02 percent of capital managed are charged to pension savers through a deduction for costs.

In 2013, the deduction for the costs of administration of premium pension was 0.10 percent, calculated on the basis of the average capital managed in the premium pension system as of January 31, February 28 and March 31, and April 30, 2013. Here the cost deduction continues even after pension disbursement begins. The cost deduction by fund managers after rebates was the equivalent of 0.31 percent in 2013. In addition, there are transaction costs of approximately 0.10 percent in the form of brokerage etc. The annual percentage cost deduction will diminish in the years ahead. As the funded capital grows, the cost is expected to drop from 0.41 percent to around 0.28 percent after rebates.

Deductions for Costs

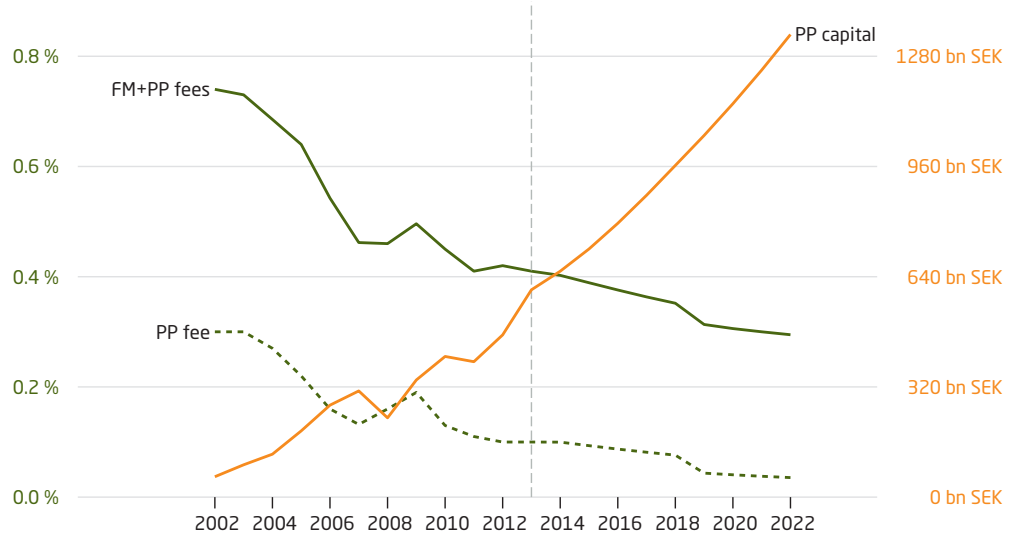
percent

	2009	2010	2011	2012	2013
Inkomstpension	0.0189	0.0343	0.0340	0.0300	0.0307
Premium pension	0.50	0.48	0.41	0.42	0.41
Costs of administration	0.19	0.16	0.11	0.10	0.10
Funds	0.31	0.32	0.30	0.32	0.31

One would expect the cost deducted from inkomstpension accounts to correspond to the cost reported in the income statement of the inkomstpension. That amount, divided by the pension liability – the inkomstpension account balances of the insured – for which disbursement has not yet begun would then be the cost deduction expressed as a percentage. However, this is not so. One reason is related to the phase-in of the system; until the year 2021, the cost deduction will be increased stepwise (see Note 11). Another reason is that the costs deducted from the accounts are budgeted costs; the (minor) discrepancies thus arising between costs deducted and actual costs are followed up and corrected in the cost deduction of the following year.

In the premium pension system, similar small discrepancies arise between the amount charged and the actual cost. These discrepancies are also corrected on an on-going basis.

Figure 5.5 Costs of the Premium Pension



FM+PP fees	Fund-management and premium pension fees
PP fee	Premium pension fee
PP capital	Premium pension capital

What Difference Do Costs Make in the Size of a Pension?

Costs are an important factor in determining the size of a future pension. A seemingly low annual fee can reduce pensions considerably since it is paid over a long period. Among factors affecting pension capital, the magnitude of costs is the one over which the responsible authorities have the most control; moreover, the insured are in a position to influence the costs of their premium pensions.

The following simplified calculation provides a fairly accurate portrayal of how a certain cost percentage affects the size of the pension disbursed. The average time for which a paid-in contribution remains in the system before being disbursed is roughly 21 years, and the average time for which one krona remains in the system during pension disbursement is about 10 years. If the cost of the inkomstpension is 0.04 percent, the charge for administrative costs will reduce the inkomstpension to $(1–0.0004)^{21} \approx$ 99 percent of what it would have been without the charge, or by roughly 1 percent. If the costs of the premium pension decrease, for example, to 0.3 percent, the charge for costs will still reduce the premium pension appreciably to $(1–0.003)^{31} \approx 91$ percent of what it would have been without the charge, or by 9 percent. The reason why the charge for costs is deducted for 31 years is that in the premium pension system the deduction continues during the period of pension disbursement. A fairly normal management fee in Sweden for saving outside the national pension system is around 1 percent – not infrequently, it is even higher. If the charge for costs for the same period as in the example above is 1 percent, pension capital savings will be 73 percent of what they would have been with a fee of 0 percent; in other words, 27 percent is lost in charges for costs.

6 Changes in the Value of the Pension System

Sweden's national pension is based primarily on earnings. In each of their economically active years, gainfully employed individuals contribute a certain portion of their income toward a pension. The bulk of their contribution goes to the inkomstpension system, a lesser share to the premium pension system. Pension credit is accumulated over a long period, 40–45 years, sometimes even more. The size of future pensions will thus depend heavily on the change in the value of contributions paid into the system. For example, someone who deposits a constant amount each year for 40 years, at an annual interest rate of 2 percent, will end up with a final balance that is 54 percent higher than that of a saver with no annual return.

In the inkomstpension system the change in value is normally determined by the percentage increase in the income index. This index follows the average rate of growth in the earnings of the economically active. In the premium pension system, on the other hand, the change in value is determined by the return on the funds of pension savers. For pensioners choosing conventional insurance, the development of value is determined by that of the assets in which the Swedish Pensions Agency has invested. The discussion below applies hereafter to the development within fund insurance. Another difference is that the change in the value of the inkomstpension is the same for everyone, whereas the return of the premium pension may vary from one individual to another, depending on the type of funds chosen.

Changes In Value During 2013

In the inkomstpension system, pension balances are normally revalued by the change in the income index. The change in value takes place only at the outset of each year, unlike the premium pension system, where changes take place on a daily basis. Since so-called balancing took effect in 2010, it is relevant to measure the change in value by the balance index, which is used as the index as long as balancing remains activated. The balance index decreased in 2010 by 1.4 percent and in 2011 by 2.7 percent. By contrast, the years 2012 and 2013 saw increases in the balance index of 5.2 percent and 5.8 percent respectively. In 2014, the balance index once again fell by 1.1 percent. See the table below. Thus the "return" on the inkomstpension accounts was these percentages at the turn of each year.

For pensioners the inkomstpension and the ATP are recalculated each year by the change in the income-/balance index, reduced by 1.6 percent. The reduction is due to the fact that an interest rate of 1.6 percent has already been credited to the inkomstpension in the annuity divisor.[1]

During a period of balancing, the inkomstpension is affected by the development of capital markets since the value of the National Pension Funds is included in the calculation of the balance ratio. Since the National Pension Funds are equivalent to only about 13 percent of all assets, the effect is not very great. The decrease in the market value of investments in the record drop of 2008 was one of the main reasons why balancing was activated in 2010.

The change in the value of the premium pension system depends entirely on the development of capital markets. Both the Swedish and the global stock market showed a positive tendency in 2013, as in the previous year. The change in value of the premium pension funds in 2013 was 21.1 percent, which may be compared to the return of the previous year, 12.1 percent.

[1] For a more detailed description of the income index and the balance index, see the chapter How the National Pension System Works.

Annual Indexation of Inkomstpension Accounts and Return on Premium Pensions
percent

	2000	2001	2002	2003	2004	2005	2006
Income-/balance index	1.4	2.9	5.3	3.4	2.4	2.7	3.2
Premium pension index [1]	-4.5	-11.1	-31.2	17.8	8.8	30.6	12.1
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
	4.5	6.2	-1.4	-2.7	5.2	5.8	-1.1
	5.7	-34.2	34.7	12.2	-10.7	12.1	21.1

1 The premium pension index measures how much an amount paid into the system at a certain point in time has changed over a certain period (so-called time-weighted return). In this case the period is the same as a calendar year. The return for individual pension savers will normally have varied depending on the funds that they have chosen.

Measures of Change in Value in the Premium Pension System

The change of value in the premium pension system can be measured in several ways. The measures presented in this chapter are so-called time-weighted return and capital-weighted return. Another term for capital-weighted return is internal rate of return.

Time-weighted return is used to describe the change in value of a fund or an index. The time-weighted return shows the return on one krona deposited at the outset of the period. No consideration is given to whether deposits or withdrawals have been made during the period.

Capital-weighted return can be used for evaluating the premium pension on an overall basis, but also individual accounts. Consideration is given to the timing and amount of all deposits and withdrawals for the account, and to the balance at the end of the period. The capital-weighted return matches the average annual interest rate during the period.

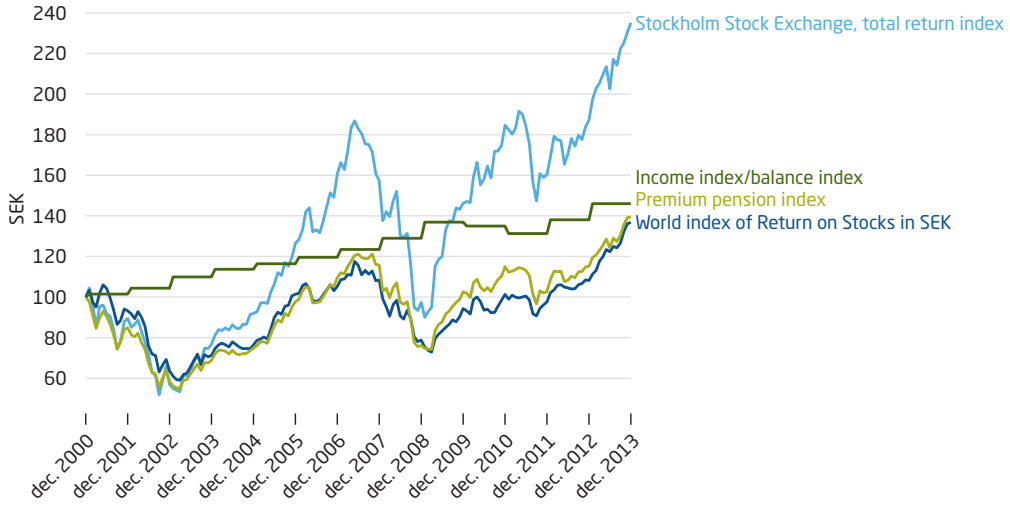
In the section Income and Premium Pensions as Complementary, time-weighted return is used, whereas capital-weighted return is used in the section Change in Value of Pension Savers' Accounts. (For a more thorough description of the formulas used to calculate time- and capital-weighted return, see Appendix A.)

Income and Premium Pensions as Complementary

One reason for establishing the premium pension as complement to the inkomstpension was that variations over the years in the growth of earnings and return on capital could tend to offset each other. Developments in recent years provide examples of cases where this distribution of risk has functioned as intended. In 2008 the relatively substantial increase in the income index compensated for the negative return on capital and resulted in a relatively substantial overall return for the pension system. In 2009 and 2010 the return on capital was positive and thus helped to offset the negative effect of subsequent balancing in 2010 and 2011. In 2011 the balance index increased, with the result that inkomstpensions were revalued upward even though the return of the premium pension system was negative. In 2012 the balance index rose again, while at the same time the return of the premium pension system was positive. In 2013, the two indexes once again moved in different directions, with the balance index falling by 1.1 percent and the premium pension index rising by 21.1 percent.

The importance of spreading risk may increase in the future, when the premium pension funds will account for a larger share of total pension capital. Spreading of risk will not always work; in some years decreases in the asset values of the premium pension may coincide with a fall in the income index / balance index.

Figure 6.1 Value of SEK 100



Value of SEK 100 paid into the inkomstpension system in december 2000 (income index) and into the premium pension system (premium pension index), and invested in an average portfolio of stocks on the Stockholm Stock Exchange and on the Global Equity Market, respectively.
Return index for the Stockholm Stock Exchange according to OMX, World Index of Return on Stocks according to Morgan Stanley Capital International Inc., converted into SEK.

In December, 2000, premium pension savers could begin investing their capital in the funds of the system. Before then, the capital had been under temporary management, which had invested it in an interest-bearing account with the Swedish National Debt Office (Riksgälden). The value of an amount deposited at the start in 2000 has varied substantially over the years.

The return index for the Stockholm Stock Exchange rose much more than the premium pension index in 2003–2007; it then dropped more precipitously in 2008. The recovery in 2009–2010, like the decline in 2011, was also much greater on the Stockholm Stock Exchange than in the premium pension index. The same is true for 2012, when the Stockholm Stock Exchange rose more than the premium pension index. In 2013, both the Stockholm Stock Exchange and the global stock market rose by over 20 percent, as did the premium pension index. The development of the premium pension index is due to premium pension savers investing primarily in foreign stocks, where the development of prices has been more stable and lower, on average, than on the Stockholm Stock Exchange. Moreover, some investments have been in interest funds that provide a steadier return.

Those who refrained from selecting funds, and thus had their moneys invested in the AP7 Såfa, the Central Government Fund Management Alternative (Statens årskullsförvaltningsalternativ), had by December 31, 2013 obtained a return on moneys invested in December, 2000, greater by 23 percentage points than that of the average fund saver (premium pension index, which includes AP7 Såfa).

Change in Value of Pension Savers' Accounts

The time-weighted return shown above does not take into account changes in the amount of capital during the period of saving, most notably deposits, but disbursements as well. For individual savers, but also for the premium pension system as a whole, it is important to show the return as measured by the capital-weighted rate of return. One reason is that the capital in pension savers' accounts has increased considerably since the beginning because the system is being built up. At the end of 2007, there was six times as much capital in the funds as at the end of 2000. Thus, the amount on which the

extremely high return was obtained in 2005 was much larger than the amount adversely affected by the equally negative return of 2002. The capital-weighted rate of return takes this difference into account by assigning greater weight to 2005 than to 2002. In the Swedish Pensions Agency's calculations of internal rate of return, consideration is also given to other factors, such as management fees, rebates and inheritance gains.

Figure 6.2 Average Capital-Weighted Rate of Return for All Premium Pension Savers up to Different Points in Time during the Years 2000–2013

Each point on the curve shows the average annual internal rate of return (after 1995) until the time concerned.

Figure 6.2 shows the progression by year of the average annual capital-weighted rate of return for the premium pension built up at different points in time, as well as the corresponding rate of return if the premium pension had instead developed like the income/balance index. With this return, the capital-weighted rate of return through the end of 2013 would have been 2.4 percent per year. This may be compared with the actual average capital-weighted rate of return for the premium pension, 5.1 percent through 2013. The diagram shows that the corresponding calculation through 2008 was minus 0.8 percent for the premium pension system and plus 3.5 percent if the premium pension system had developed like the income/balance index. Note that the curve does not show the actual capital-weighted rate of return for inkomstpension savers, since the capital structure of the inkomstpension system is considerably different.

Figures 6.1 and 6.2 reflect two points of view for the saver, based on time-weighted and capital-weighted return as explained above. In the first diagram SEK 100 is deposited in the premium pension system in December, 2000, and it is worth about SEK 139 at the end of December, 2013. The value reached its low point of SEK 55 during 2002–2003 and peaked at over SEK 140 in December, 2013. To take into account the deposits of premium pension savers into the system each year, and the long-term nature of pension saving, the second diagram shows the average annual capital-weighted return up until a certain point in time. The average annual capital-weighted return on moneys paid into the premium pension system was 5.1 percent in December, 2013. The annual average capital-weighted return was lowest, at over -8.5 percent, in 2001, and highest, at about 7 percent, during 2007. As the premium pension system matures, the annual variation in capital-weighted return will diminish, as is clearly shown in the diagram.

Figure 6.3 shows the average capital-weighted rate of return for pension savers sorted according to their first year of contributing to the system. The difference in return decreases the longer the birth cohorts have participated and been paying into the system. All groups have shown a positive tendency on average in the development of their premium pension saving. Individuals who started participating in 2012 have not had their pension credit placed in funds by the end of 2013, so their capital-weighted return depends solely on interest from the interim administration.

Figure 6.3 Average Capital-Weighted Rate of Return Annually from the Saver's First Pension Qualifying Year

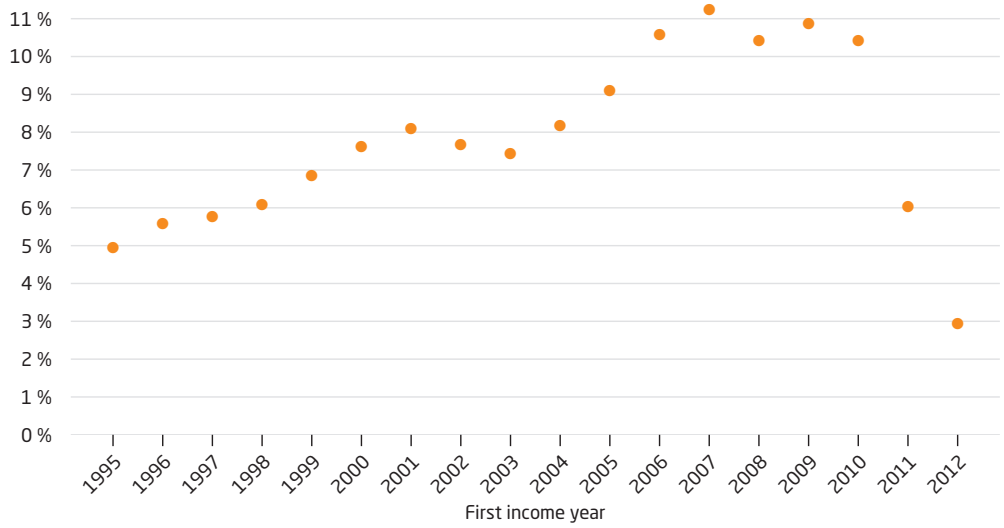
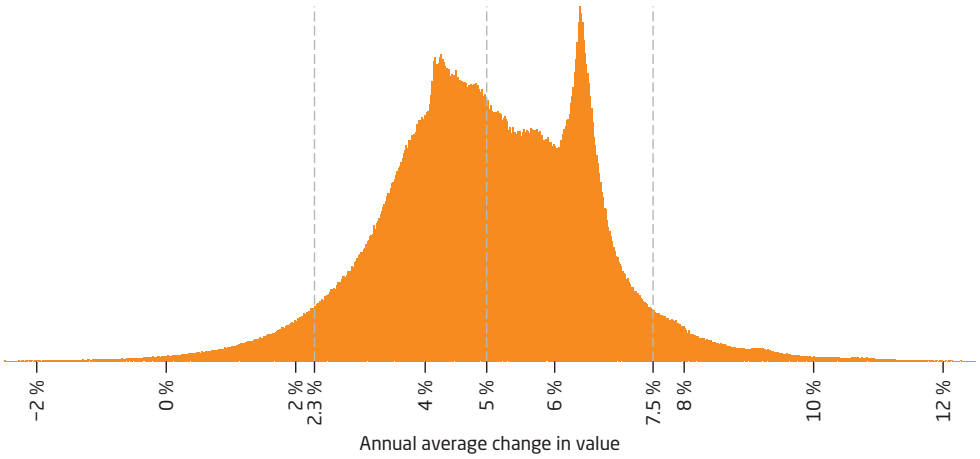


Figure 6.4 shows the distribution of the capital-weighted rate of return among pension savers who have been in the system for an equally long time. Among pension savers who began earning pension credit in 1995 and who then invested it in funds in 2000, just over 99 percent reported a positive change in value at the end of 2013. It may be noted that five years earlier, at the end of 2008, only 35 percent reported a positive development of value. The sharp peak around 6.5 percent in the figure below mainly consists of individuals who have their capital invested in the state preselection option.

Figure 6.4 Pension Savers who Began Earning Pension Rights in the Premium Pension System 1995, Sorted According to Annual Capital-Weighted Rate of Return up to and including 2013



The dashed lines indicate the median and the percentiles for 5 and 95 percent.

Since the data refer to participants since 1995, the explanation for the spread is not that they entered the system at different times (compare Figure 6.3, which shows the distribution by first year of credit earning). Rather, the principal reason is the choice of fund investments with differences in rate of return.

The table below summarizes the average annual change in value with the time- and capital-weighted rates of return during the existence of the premium pension system. From 1995 on, allocations were set aside for the premium pension, but not until December, 2000, were the moneys paid into funds. During the period 1995–2000 the moneys were invested in interest-bearing assets.

Nominal Average Annual Change in Value and Inflation, Respectively
percent

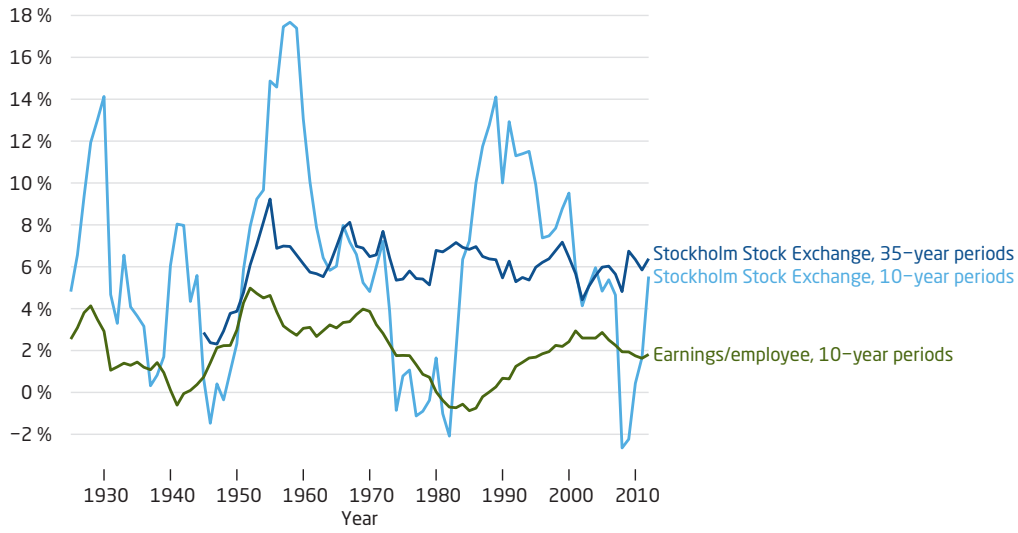
	1995-2013	2000-2013
Premium pension index (time-weighted)	3.2	2.6
Premium pension (capital-weighted)	5.1	5.1
Income/balance index (time-weighted)	2.8	3.0
Income/balance index (capital-weighted)	2.4	2.4
Inflation	1.2	1.4

Importance of a Long-Term View

The aspects of the pension system that relate to its change in value cannot be judged on the basis of the changes in value over only a few years. The importance of a long-term view is easily underestimated, both when stock prices are rising and when they are falling. For the 93-year period 1918–2012, the average real rate of return on the Stockholm Stock Exchange was 6.8 percent per year. Overall, the real rate of return on equities was 5.9 percent per year. However, this does not guarantee such a return in 10 or even in 20 to 30 years. For different 10-year periods since 1930, the real rate of return has varied considerably, on the Stockholm Stock Exchange, from 23 percent per year (1980–89) down to

negative figures in certain other periods. There have often been major changes between adjacent 10-year averages, both on the Stockholm Stock Exchange and world-wide.

Figure 6.5 Real World-Wide Rate of Return and the Development of Swedish Real Earnings per Employee



For each year the curves show the average real total return per year (including dividends) over the preceding 10 and 35 years, respectively, and the percentage change per year in real earnings per employee over the preceding 10 years.

One conclusion is that the "long run" is not 5–7 years, or even 10 years, as is sometimes said, but that people should think in terms of a much more extended period for the return on stocks. Where pensions are concerned, a reasonable time horizon for younger people would be 30–40 years. Historically, the real development of value over 35-year periods has also been more stable, as is shown in the diagram. In the diagram one can compare the development of real earnings (per employee) over ten-year periods with the real world-wide rate of return on equities over periods of ten and 35 years, respectively. The reason for using the world-wide rate of return in this case is that most of the premium pension capital is invested in foreign equities. Moreover, foreign equities account for the bulk of National Pension Fund's shareholder capital.

Only when the period is extended to 35 years is the development of the real value of global stocks comparable to the stability of the progression of Swedish real earnings for a ten-year period. The progression of real earnings is the principal determinant of the development of the value for the inkomstpension. During the period 1918–2012, real earnings per employee increased by an estimated 2.1 percent per year, much less than the rate of return on equities, which was 5.9 percent per year. The difference was most pronounced in the 1980's and 1990's.

7 Three Scenarios for the Future of the National Pension System

To show how the financial position of the inkomstpension and the size of pensions can be affected in the long term by different paths of development, this section presents projections of the system's development for the next 75 years. For the first time, the Swedish Pension Authority has calculated premium pension growth during the same period.

The long-term financial position of the inkomstpension system is described below in three different projections, or scenarios. These are referred to as the base, optimistic and pessimistic scenarios. The following three aspects of financial position treated are:

- Net contribution
- Fund strength
- Balance ratio

The net contribution is the difference between the system's contribution revenue and pension disbursements. For a better comparison, the net contribution is expressed in the scenarios as a percentage of total paid-in contributions; this adjusts for the volume effect of long-term economic growth. The net contribution is currently -11.7 percent; in other words, contributions are about twelve percent less than pension disbursements.

Net Lending of the Inkomstpension System *
billions of SEK

	2013
Primary net lending	
Net contribution	-27
Contribution	227
Pensions	-254
Costs of administration etc., net	-3
Total Primary net lending	**-29**
Return	
Interest income	10
Dividends on shares	13
Total Return	**23**
Net lending	**-7**

* There may be some minor deviations from the National Accounts.

The net contribution corresponds (after deduction for costs of administration etc.) to the *primary* net lending of the system. Total net lending includes the net return of the National Pension Funds, which consists of interest income and dividends on shares.

Net lending contributes to the change in the size of the National Pension Funds. In addition, there are upward and downward fluctuations, sometimes considerable, in the market value of the securities held. In 2013 the assets of the buffer fund (the First–Fourth and Sixth National Pension Funds) increased by a total of SEK 128 billion.

Fund strength is the market value of National Pension Fund capital divided by pension disbursements for the year. Fund strength shows how many years of pension disbursements can be financed by the fund. For the year 2013 fund strength was 4.16.

The balance ratio is a measure that summarizes the financial position of the pension system. The balance ratio is the ratio between the total assets of the system and its liabilities. The assets consist of the contribution asset with the addition of the market value of the National Pension Funds. (For a more detailed discussion, see How the National Pension System Works and Appendix B). Calculated on the basis of assets and liabilities as of December 31, 2013, the balance ratio was 1.0040.

The future financial position of the pension system will depend on the development of several demographic and economic factors. The three scenarios studied differ in the following respects:

- Demographic development
- Change in average income
- Return on the National Pension Funds

The detailed assumptions for the scenarios are presented last in this chapter under the heading Assumptions in the Calculations for the Three Scenarios.

The number **paying contributions** is determined by the working-age population and the proportion thereof with earned income or other pension-qualifying income subject to contributions. The development of the working-age population depends primarily on net immigration and – in the longer term – the birth rate. The development of the number paying contributions is of significance for the financial position of the system. Pensions and the pension credit earned by the gainfully employed are revalued annually by the change in average income (the income index, or the balance ratio in years when balancing is activated). If there is an increase in the number of people with incomes who are paying contributions, the consequences will be that total contributions rise more than average income, and that the net contribution, the buffer fund and the balance ratio all increase.

The change in the **average income** of the economically active is of limited importance for the net lending of the pension system, for pensions are linked to the income index, which follows average income. A change in average income results in corresponding changes in both contribution inflow and pension disbursements. In principle, therefore, a change in average income will have no effect on the relative net contribution. But because the system is designed with delays in the effect of income changes on the income index, a change in average income will give rise to certain discrepancies, and these will also have repercussions on the balance ratio. By contrast, the level of future pensions, with a given net contribution, will of course be heavily influenced by the long-term change in the income index.

The **return** on the National Pension Funds affects the size of the Funds and thus fund strength and the balance ratio as well. The negative effect of weak growth in the net contribution on fund strength and the balance ratio can be offset by a high return on fund capital. In the base scenario, the real annual return assumed is 3.25 percent; in the optimistic and pessimistic scenarios, the respective returns assumed are 5.5 percent and 1.0 percent. A factor of importance for both fund strength and the balance ratio is the difference between the return and the average income. This is due to the fact that both pension disbursements and the system's pension liability grow at the same rate as average income,

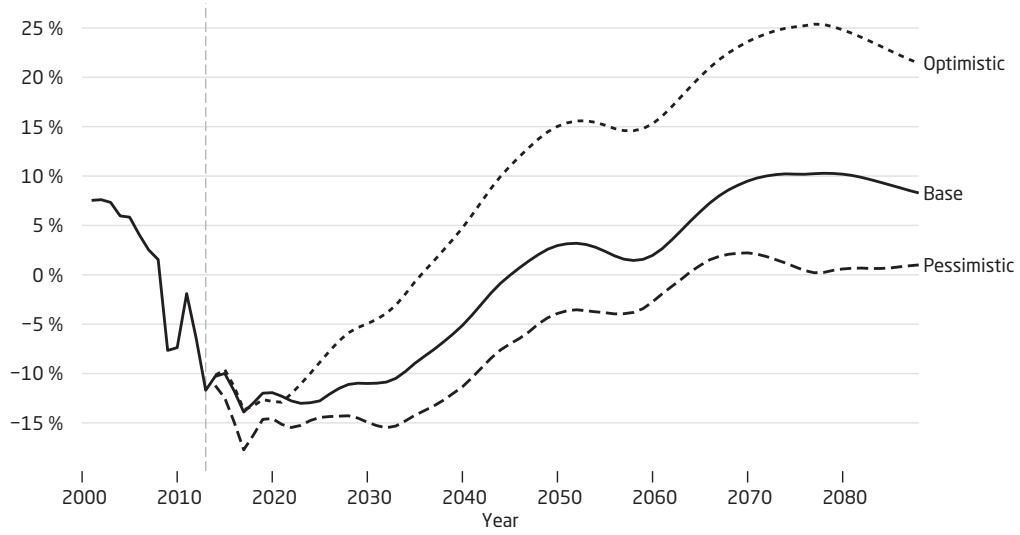
whereas the market value of the National Pension Funds grows with the return and is included in the numerator both for the measure of fund strength and for the balance ratio; see Appendix B.

In summary, the net contribution will be negative in all three scenarios for many years to come. Pension disbursements are thus expected to exceed contribution revenue, but only in the pessimistic scenario does this development gradually exhaust the buffer fund. The fund is exhausted because of lower nativity (birth rate) and thus fewer gainfully employed in the future, as well the low return on the fund.

Net Contribution

As previously noted, the net contribution is the difference between contribution revenue and pension disbursements in relation to contributions. Since the birth cohorts in the population differ in size and have worked to differing degrees, the contribution revenue and pension disbursements of the system will vary over time. For a better comparison of the net contribution in the three scenarios, the net contribution has been divided by the inflow of contributions in the scenario. This eliminates the volume effect of the differing growth rates on the net contribution in monetary terms.

Figure 7.1 Net Contribution



Contribution revenue less pension disbursements as a percentage of contribution revenue.

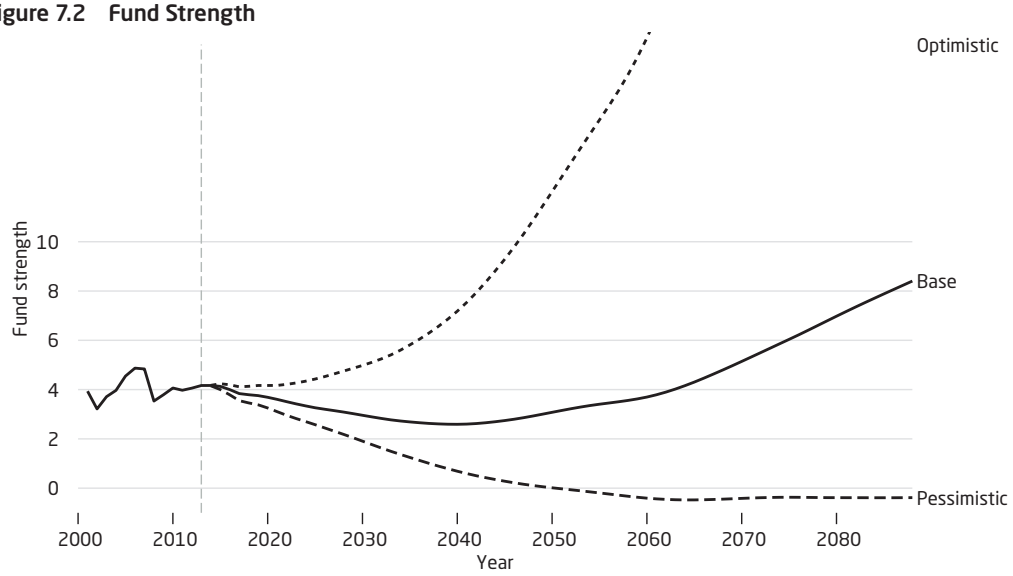
The net contribution was negative for the first time in 2009 and is expected to remain so for many years. The explanation is that to a large extent the large birth cohorts of the 1940's have left the labour force and retired. The balancing in 2010 and 2011 can be seen in the diagram in the form of an improved net contribution. Around 2025 the weakening will lessen, and the contribution deficit will decrease. After 2045 revenue will exceed expenditure in the base scenario. The principal reason is that the large birth cohorts of the 1990's and the 2010's will be of working age at the same time as the cohorts of the 1960's with pension disbursements will be decreasing; see figure 7.11 at the end of this chapter. The effect of demography is also reflected in the peaks and troughs in the figure above. The difference in timing of the peaks and troughs between the pessimistic and other scenarios is due to different assumptions of life expectancy and employment. The net contribution is negative until 2035 in the optimistic scenario and until 2064 in the pessimistic one.

The Buffer Fund - Fund Strength

The size of the buffer fund is expressed in terms of fund strength, that is, the fund capital at year-end divided by pension disbursements for the year. Fund strength shows how many years of pension disbursements the fund can finance without additional contributions or return in the future. The different development of the buffer fund in the three scenarios is due to differences in net contribution and in the assumed return on the fund.

Fund strength has averaged 4–5 years since 1990. At the end of 2013, it was just over 4 years and 2 months.

Figure 7.2 Fund Strength



Size of buffer fund divided by pension disbursements the same year.

In the **base scenario** the contribution deficit leads to a slow decrease in fund strength. Fund strength reaches its low point around 2040 at just below 2.6 years of disbursements. Thereafter, fund strength increases in the base scenario owing to a positive net contribution and the fact that the return of the fund (3.25 percent) exceeds the increase in average income (1.8 percent).

In the **optimistic scenario** fund strength increases every year; the reason is that the deterioration in the net contribution is more limited than in the base scenario and that the return of the fund is high (5.5 percent) in relation to the development of average income (2.5 percent). In 2040 fund strength is equivalent to about 7 years of pension disbursements and will continually grow further.

In the **pessimistic scenario** the buffer fund is exhausted around 2050, and fund strength is slightly negative thereafter. The deficit is then financed through lending from the National Debt Office (Riksgälden). In the years when the development of the fund is negative, interest is paid on these loans. In the diagram the rate of interest on the loans is assumed to be the same as the assumed return of 1 percent in the scenario.

The Balance Ratio

The financial position of the inkomstpension is expressed in terms of a ratio: the system's assets in relation to pension liabilities. See the section Another Rate of Interest than the Income Index – Balancing in the chapter How the National Pension System Works. When the ratio is less than one, liabilities exceed assets. A ratio of 2.0 means that assets are twice as great as liabilities and that the system in principle is fully funded, that is, the buffer fund, the contribution asset and the pension liability are of equal size.

In 2010 balancing was activated for the first time, which meant that indexation of pensions and pension balances will decrease. Balancing is still activated and will remain so until the indexation of the system resumes the level where it would have been if balancing had not been activated. When balancing is activated, "interest" is credited to pensions and pension balances through the change in the income index and the balance ratio. As long as balancing is activated, the cumulative indexation is less than it would have been without balancing. In particular years of a period of balancing, however, balancing may result in higher indexation; these are years when the balance ratio is greater than one. The table shows the cumulative effect of balancing. In 2015, when the cumulative balance ratio in the base scenario is 0.9474, the inkomstpension will be 5.26 percent less that it would have been without balancing. In years when the cumulative balance-ratio product is increasing, the balance ratio is greater than one. In years when it is decreasing, the balance ratio is less than one.

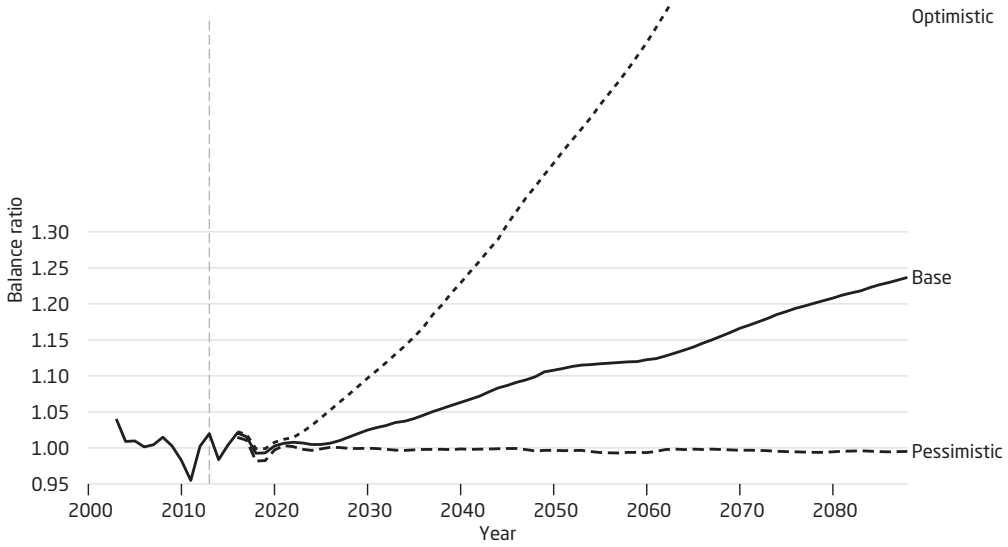
Cumulative balance-ratio product *

Year	Base	Optimistic	Pessimistic
2009	1.0000	1.0000	1.0000
2010	0.9826	0.9826	0.9826
2011	0.9383	0.9383	0.9383
2012	0.9406	0.9406	0.9406
2013	0.9592	0.9592	0.9592
2014	0.9436	0.9436	0.9436
2015	0.9474	0.9474	0.9474
2016	0.9670	0.9687	0.9612
2017	0.9820	0.9869	0.9715
2018	0.9748	0.9857	0.9538
2019	0.9680	0.9847	0.9371
2020	0.9706	0.9924	0.9343
2021	0.9768	1.0000	0.9373
2022	0.9844	1.0000	0.9389
2023	0.9912	1.0000	0.9372
2024	0.9959	1.0000	0.9340
2025	1.0000	1.0000	0.9328

* The cumulative balance-ratio product in the current period of balancing. When the product reaches 1.0000, balancing ends. Beginning with 2016 the balance ratios are based on predictions.

The best prediction of the balance ratio in the short term is reported in the latest Swedish Pension Agency report "Anslagsbelastningen och prognos för anslag inom Pensionsmyndighetens ansvarsområde" (Appropriations Available and Forecast in the Swedish Pension Agency's Remit).

Figure 7.3 Balance Ratio



(Contribution asset + buffer fund) / pension liability

In the **base scenario** the balance ratio is less then one in 2018–2019 and greater than one in other years. In the base scenario the balance ratio strengthens gradually because of demographic factors and the fact that the return on the buffer fund is greater than the income index. Balancing ends in 2025, and the balance ratio reaches 1.1 around 2050, a level that according to the proposal in "Utdelning av överskott i inkomstpensionssystemet" (Distribution of Surpluses in the Inkomstpension System, SOU 2004:105) would mean that there were distributable surpluses. However, no such proposal has been presented to the Swedish Parliament.

In the **optimistic scenario** the balance ratio is greater than one in 2016–2017. Then follows rather limited negative balancing in 2018 and 2019, after which it ends permanently in 2021. Beginning with 2030 the balance ratio exceeds 1.1.

In the **pessimistic scenario** the system remains in balance for the entire projection period. In 2088 the cumulative balance ratio product is 0.7555; this means that the inkomstpension is 24.45 percent lower than it would have been without balancing.

The lag in the income system and other factors cause a cyclical volatility in the balance ratio that is observable in the diagram for the first 20 years. In the report "Fördjupad analys av vissa beräkningsregler i inkomstpensionssystemet" (A Deeper Analysis of Certain Calculation Rules in the Inkomstpension System), February 25, 2013, the Swedish Pensions Agency, offers some suggestions for eliminating this volatility.

Premium Pension

In addition to projections of growth for the pay-as-you-go system, the Swedish Pensions Agency has for the first time calculated premium pension growth during the same period. The scenarios are the same: base, optimistic and pessimistic.

The estimate is based, somewhat simplified, on the assumption that premium pension returns are spread equally among different age groups and remain constant throughout the simulation period. This is of course unrealistic. Variation from year to year will most likely resemble the high degree of

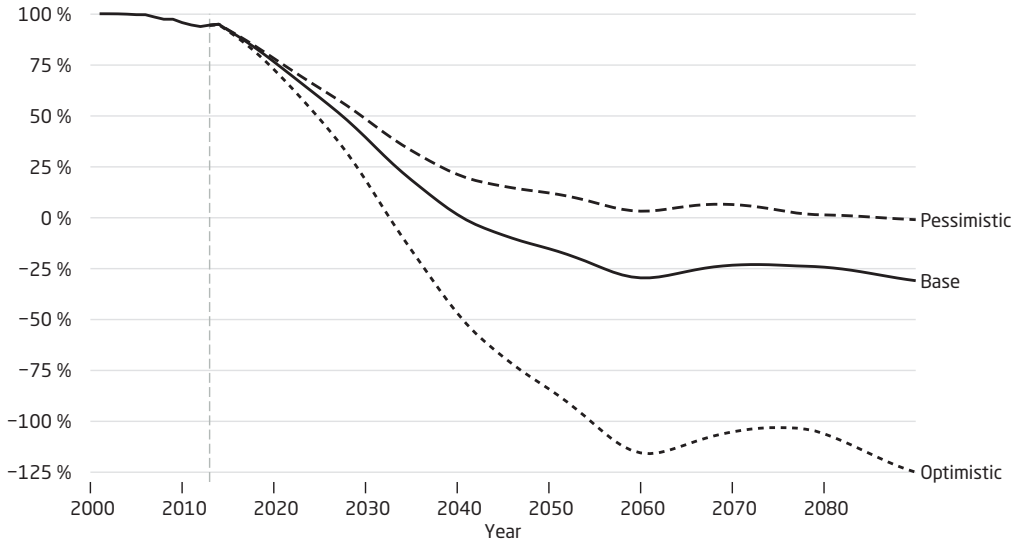
variation seen historically. But since the purpose of the calculation is to highlight long-term average features, such expected volatility is disregarded.

Fund returns are assumed to be the same as in each scenario's assumption of real AP fund returns. That means 3.25 percent for the base scenario, 5.5 percent for the optimistic scenario and 1.0 percent for the pessimistic scenario. To this is added inflation of 2.0 percent. In addition to the return on premium reserve there is an assumption of annual interest rate in the so-called interim administration, the period from when the pension premium is paid out by the employer or the state to when it is placed in the pension saver's account. This involves an approximate time span of 18 months. The interest during the interim administration is nominally 2.0 percent in the base scenario, 3.0 percent in the optimistic scenario and 1.0 percent in the pessimistic scenario. In addition to return on capital the premium pension accounts are charged an administration fee that is assumed in the long run to stabilize at 0.28 percent per year of premium pension capital.

As pension schemes go, premium pension is relatively young. Earning started first in 1995. Only people born in 1938 or later have been able to earn the premium pension and the eldest did so with a contribution of only 0.5 rather then 2.5 percent. The system is however growing rapidly. People born in 1970 were 25 years old when contributions to the system started. When these people approach retirement around 2035–2040, they will have been able to earn premium pension more or less throughout their whole active period. Around 2060, most pensioners will have been able to earn premium pension throughout the whole of their professional lives and premium pension will then enter into its mature phase.

A revealing measure of the system's maturity phase is the net contribution, ie the difference between the system's income and disbursements. This is divided as before by the contributions themselves.

Figure 7.4 Net Contribution Premium Pension



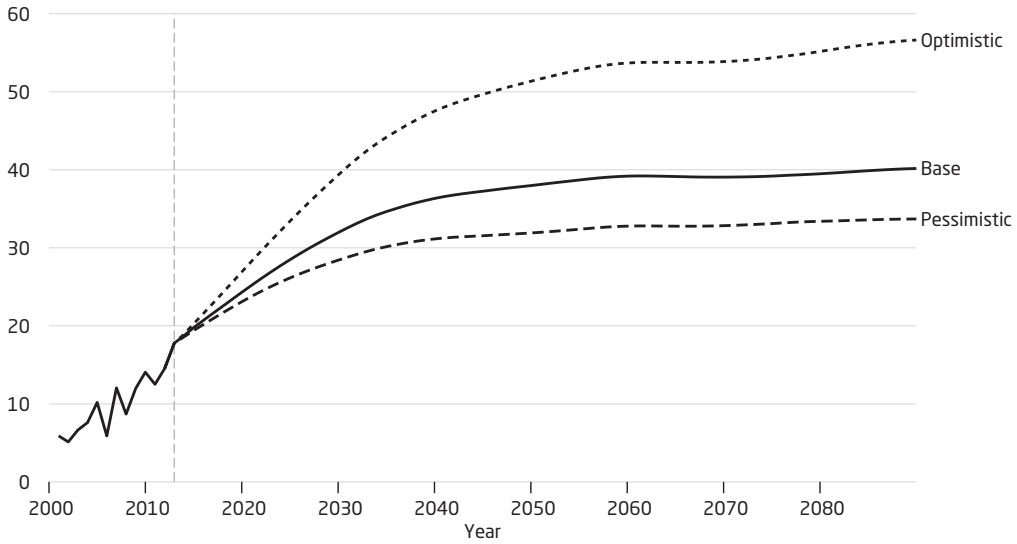
Contribution revenue less pension disbursements as a percentage of contribution revenue.

The net contribution is almost 100 percent in the beginning, since the volume of disbursements is extremely small. As today's younger age cohorts begin retiring, a greater volume of disbursements will affect the net value.

When the system has been phased in, around 2060, the pessimistic scenario will begin to fluctuate around zero. This scenario gives no other return than wage growth (excess return); variations in net contribution follow demographic variations in different cohorts. Assuming a greater return than wage growth, the premium pension scheme will pay higher pensions than incoming contributions. The greater the return, the higher the possible disbursements, and consequently a more negative net contribution. Returns are an additional inflow of disbursable funds. In the optimistic scenario, excess returns are around 3.2 percent (5.5 - 2.0 - 0.27) per year. Assuming a lifetime of savings, each premium payment will then be worth 2–3 times more than without excess return. The high returns usually associated with high risk-taking is not apparent here. A more comprehensive picture would also show the effect of variations in returns. The high volatility of real life can lead to individuals risking negative returns on their savings over the life cycle, even if the long-term trend may be more or less favourable.

Another way to consider the maturity of the system is to study the overall size of the premium funds. During the construction phase, the fund is relatively small. The system is mature for an age cohort when its individuals have been able to earn premium pension rights throughout their working lives. The system is mature in its entirety when it consists wholly of such cohorts. If all cohorts had the same size, the same incomes relative to the current level of income, followed each other's mortality patterns, and their excess returns beyond wage growth corresponded to the deducted administration fee, annual pension payments would be equal to the total annual pension premium. Fund availability would then stabilize at about 32–33 times the annual premium payment. The closest we can get to this situation is represented in figure 7.5 by the pessimistic scenario. Population growth is subdued and excess return is zero. 33 corresponds to the expected average time that each contribution remains in the fund between payment and disbursement. The fund can be seen as a 33-year-long series of annual payments which increase only with general wage growth. The same amount that is deposited each year is paid out in the form of disbursements. Since all individuals eventually transition from a professionally active period of life to retirement, roughly the same amount is transferred annually from the savings phase to the payout phase as that deposited and disbursed.

Figure 7.5 Size of Premium Funds in Relation to Contributions Received during the Corresponding Year

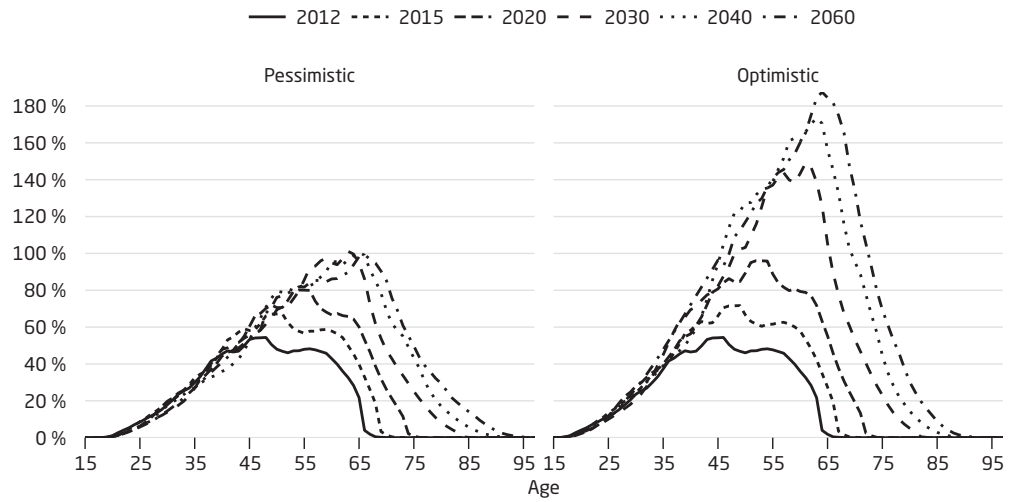


Both base and optimistic scenarios lead to a much larger fund. This is due to higher excess returns. The fund grows faster than contribution income. This will lead to higher pension disbursements as was shown in figure 7.4.

Figure 7.5 can be said to illustrate fund strength: fund size relative to the size of payments received. In the early stage of premium pension history – without disbursements and without excess yield – funds match, in principle, the number of contribution years. The starting value of the curves is based on the number of years since the start of the system, the varying historical returns, and the historical change in contribution rate.

Another way to present the size of the fund is to show its size in different years and for different age groups. Since the fund is constantly growing with both new contributions and returns, it is also appropriate here to normalize the size of the fund through a division by the current year's contributions.

Figure 7.6 Premium Pension's Total Fund Assets, Normalized by Contribution Size and Sorted by Age, for Various Future Dates



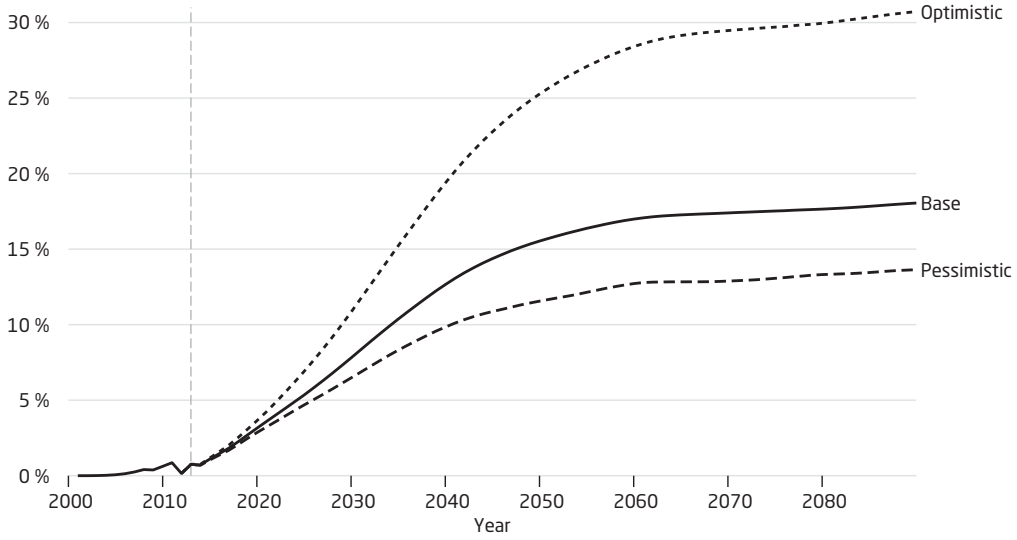
In the simplest case – the pessimistic scenario without excess returns – the diagram illustrates how more and more elderly have allocated funds for their retirement. As time progresses, more and more cohorts have been able to earn premium pension rights during an ever-increasing part of their careers. After 2060, distribution changes insignificantly, except for small variations in cohort sizes. It is worth noting that when maximum fund size occurs (age 65) it amounts to about 100 percent of the contribution. In a mature system the absence of excess returns means that roughly the same annual volume is paid in as contributions as is paid out in the form of pensions. It also means that the share of the fund earmarked for retirees must roughly equal pensions for the current year. The small deviations that occur derive from variations in cohort sizes and returns.

In the optimistic scenario which assumes excess returns and population growth, the picture changes. Admittedly, these effects partially cancel out each other. The structure of population growth moves the centre of gravity down through age groups, while exponential growth due to excess returns gives more weight to the elderly. The excess return means that the fund will be almost twice as large as in the pessimistic scenario. During the 20 years between the average age for contribution payments into

the retirement fund, funds have yielded an interest of 80 percent more than wage growth. This excess return continues even after retirement until the cohort's last kronor is paid.

Phasing-in also means that an increasing share of the pension will be paid from premium pension funds. Of current contributions, 13.5 percent goes to premium pension. In the absence of excess return, also disbursements will be paid with the same relative proportion. Assuming an excess return, the picture changes. In the optimistic scenario premium pension accounts for over 30 percent.

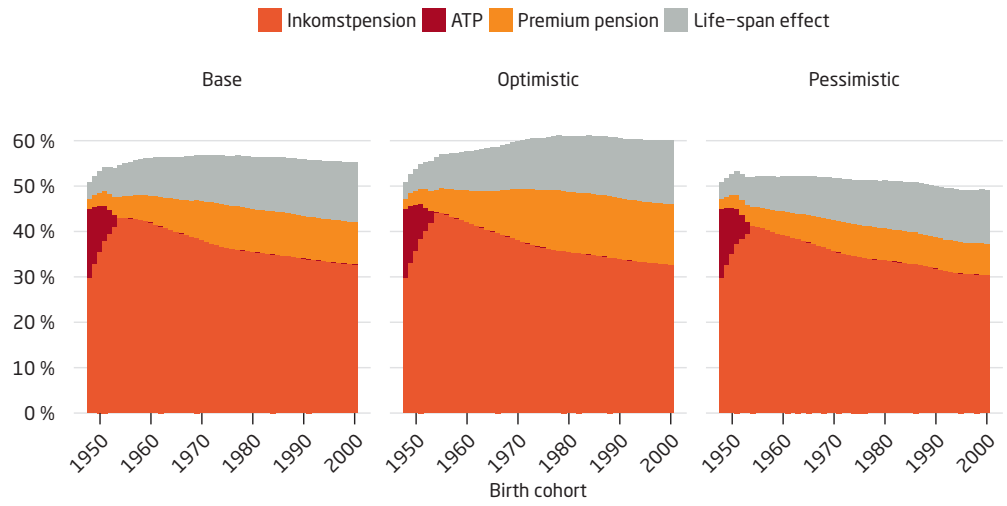
Figure 7.7 Premium Pension as a Proportion of the Earnings-Related Public Pension



Development of Pension Levels for Typical Cases

This section describes the development of the pension level at age 65 for typical cases born 1948–2000 in the three different scenarios. The effect of the scenarios on the pension level has been isolated by calculating pensions for an individual who has worked for 42 years before retiring at age 65 with an income that increases at the same rate at the general level of income. The pension level is calculated as the newly granted income-based national pension at age 65 in relation to final earnings.

Figure 7.8 Pension in Proportion to Final Earnings, Different Birth Cohorts



The pension levels in the scenarios at age 65 are described in the figures above, one for each scenario. The figures show a life-expectancy effect in the form of the total national pension received if the typical case postposes retirement to the extent required to compensate for the increase in life expectancy. Also visible are the phase-out of the supplementary pension and the phase-in of the inkomstpension and the premium pension.

A longer working life gives a higher pension, both because new pension credit is earned and because a lower annuity divisor is used in calculating the pension. Of the total increase in life expectancy, roughly two thirds must be added to working life in order to obtain the same pension level, while one third goes to increased life expectancy in the years as a pensioner. The retirement age required for the pension level not to decrease because of the increase in life expectancy is shown in the table in the next section, Life Expectancy Effect and Alternative Retirement Age. In the figure the pension level for the typical cases, alternative retirement ages are market by light grey.

In the **base scenario** the pension level at age 65 decreases successively from 50 percent of final earnings for birth cohort 1948 to about 42 percent for birth cohort 2000. One reason for this decrease is the expected increase in the average life span. If working life is lengthened so that the effect of the increased life expectancy is neutralized, the pension level stabilizes around 55 percent of previous earnings from work. The higher pension level is attributable to the premium pension, which yields a return above wage growth by 1.45 percentage points. As a result of this excess return, the premium pension accounts for a larger share of the national pension than is reflected in its contributions.[1]

For the youngest birth cohorts, the premium pension at age 65 is roughly 9 percent of final earnings and the inkomstpension about 33 percent. At the alternative retirement age the corresponding figures are 12 percent and 43 percent, respectively.

In the **optimistic and pessimistic scenarios** average growth is higher and lower, respectively, than in the base scenario. There is also a difference in the return on the premium pension.

[1]Another reason why the newly granted premium pension is relatively larger is that the preliminary interest in the annuity divisor is higher for the premium pension than for the inkomstpension; see the chapter How the National Pension System Works and Appendix A.

When balancing is not activated, the inkomstpension accrues interest (is indexed) by the change in average income, and inkomstpensions are changed at the same rate as average income. In this case the relationship between the inkomstpension and final salary is not affected by the growth in real earnings, and the inkomstpension as a percentage of income remains unchanged. On the other hand, the inkomstpension will naturally be lower in monetary terms with lower growth and higher with higher growth.

The relationship between the return of the premium pension system and the increase in average income affects the relative size of the premium pension. The larger the positive discrepancy between return and wage growth, the greater the share constituted by the premium pension.

The pension levels increase for the typical cases if they are assumed to have occupational pensions. The increase is roughly 15–20 percentage points at age 65 and roughly 20 percentage points with the alternative retirement age.

Life Expectancy Effect and Alternative Retirement Age

The table below shows, among other things the life expectancy for persons at age 65 for birth cohorts 1930–1995. The expected average remaining life span at age 65 increases from 17 years and 5 months for persons born in 1930 to 24 years and two months for persons born in 1995, an increase in remaining life span of almost 7 years. If those born in 1995 are to have the same pension level that they would have had if life expectancy had not increased, a portion of the increased life span after age 65 must be devoted to working longer. For birth cohort 1995 working life must be prolonged to 69 years and 4 months. At the same time, it is anticipated that those born in 1995, despite the higher retirement age, can look forward to a retirement period 3 years and 2 months longer than those born in 1930.

Alternative Retirement Ages and Time Spent Retired *

Birth cohort born in	… reaches 65 in	Life expectancy at 65	Alternative age of retirement	Time spent retired	… compared to birth cohort 1930
1930	1995	82 yr 5 mo	65 yr 0 mo	17 yr 5 mo	0 yr 0 mo
1940	2005	84 yr 0 mo	65 yr 2 mo	18 yr 10 mo	1 yr 5 mo
1945	2010	84 yr 8 mo	65 yr 6 mo	19 yr 4 mo	1 yr 11 mo
1950	2015	85 yr 3 mo	66 yr 4 mo	19 yr 3 mo	1 yr 10 mo
1955	2020	85 yr 9 mo	67 yr 1 mo	19 yr 3 mo	1 yr 10 mo
1960	2025	86 yr 3 mo	67 yr 5 mo	19 yr 5 mo	2 yr 0 mo
1965	2030	86 yr 9 mo	67 yr 9 mo	19 yr 8 mo	2 yr 3 mo
1970	2035	87 yr 3 mo	68 yr 1 mo	19 yr 10 mo	2 yr 5 mo
1975	2040	87 yr 8 mo	68 yr 4 mo	20 yr 0 mo	2 yr 7 mo
1980	2045	88 yr 1 mo	68 yr 8 mo	20 yr 2 mo	2 yr 9 mo
1985	2050	88 yr 6 mo	68 yr 11 mo	20 yr 3 mo	2 yr 10 mo
1990	2055	88 yr 10 mo	69 yr 2 mo	20 yr 5 mo	3 yr 0 mo
1995	2060	89 yr 2 mo	69 yr 4 mo	20 yr 7 mo	3 yr 2 mo

* Time spent retired refers to expected remaining life span at alternative retirement ages.

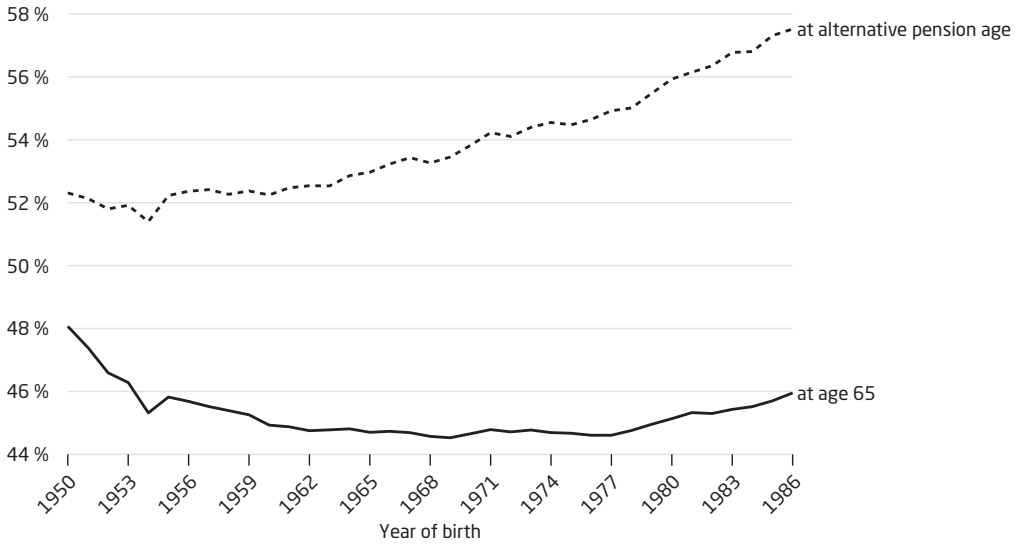
For those born in 1954 and thereafter (that is, for individuals covered entirely by the rules of the new pension system), the alternative retirement age means that on average 2/3 of the increased life span will be spent working, and about 1/3 on a longer period of retirement.

The Level of the National Pension in the Projection of the Orange Envelope

In the Orange Envelope, pension projections are made each year for each insured person based on that individual's actual pension credit earned. When the envelope is mailed in February/March income data are available up to and including the calendar year two years before the envelope is mailed. Thus, the envelope sent out in 2014 is based on all incomes earned by each individual through 2012. In the forecast, consideration is given to balancing in 2014, but not to positive or negative balancing, if any, in coming years. The projection is calculated on the basis of zero-percent growth for coming years, both in the individual's own income and in the national average income.

As a complement to the pension level for the typical case, the pension level in the projections of the Orange Envelope are calculated as follows: the pension projection of each individual at age 65, excluding any guaranteed pension, divided by the pension-qualifying income of the same individual in 2012,[2] hereafter referred to as the replacement rate. The equivalent is also done for alternative retirement age; see description above. An average for each annual birth cohort between birth year 1950 and 1986 has thereafter been calculated by adding up all replacement rates and dividing the sum by the number of individuals in the birth cohort.

Figure 7.9 Orange Envelope Disbursement Rates - Average Values for Income-Based Pension at Age 65 and at Alternative Retirement Age as a Percentage of Pensionable Final Earnings



Source: 3,837,968 individual projections in the Orange Envelope 2014. Guarantee pension is not included.

Both the assumptions underlying this calculation and the method applied differ from those used in the calculation of pension levels previously in the chapter under the heading Pension Levels for Typical Cases. In the figure 7.9 the comparison income is the income below the ceiling on earnings in 2012 for the respective individual, corresponding to forecast final earnings since it is assumed that there will be no growth in real earnings. For young individuals, with few years of pension credit earned, this means

[2]For persons with no income that year, no replacement rate can be calculated, and they have been excluded from the calculation. Persons with a replacement rate greater than 150 percent have also been excluded from the calculation. The reason for doing so is that such high replacement rates generally apply to incomes so low that they are temporary.

that the replacement rate has been calculated with a virtually straight-line earnings profile. For persons relatively close to retirement age, the pension is calculated on the basis of many years' actual income history, which on average is reflected in a concave profile.

The high replacement rates calculated at the pension age of 65 for the oldest birth cohorts are partly explainable by the fact that their own incomes have begun to decrease. As a result, the replacement rate will be higher with the method used here. An additional explanation is that for older birth cohorts a portion of their pensions is calculated by the ATP rules, which on average are more generous. The replacement rate, calculated at the alternative pension age, increases for younger birth cohorts. The younger cohorts are expected in the forecast to have many years of earning pension credit ahead of them. This produces relatively high replacement rates. For older cohorts, new persons are added each year who have not previously earned pension credit. This lowers the replacement rate for older cohorts compared with younger ones. The replacement rate for younger cohorts is also expected to decrease in time as their salaries increase. A person's income generally tends to increase more dramatically at the beginning of working life, only to slow down later on.

In calculations of the pension level in the national pension system, it is necessary to decide whether or not incomes above the ceiling should be included in the calculation of comparison income. In the pension levels presented in this section, consideration has not been given to incomes above the ceiling. Of all pension-qualifying incomes in Sweden, 10 percent exceed the pension-credit ceiling. If incomes above the ceiling for comparison income are added, comparison income increases by 10 percent. This lowers the average pension level by nearly 9 percent. In addition, gross pensions are compared with gross incomes. In 2007 a tax credit for gainful employment was introduced, which means that the tax is no longer the same on pensions as on most of the incomes included in pension-qualifying income. In 2008, 2009 and 2010 reinforced tax credits on earned income were passed. Tax relief in the form of a higher basic deduction was provided in 2009 for those who had reached age 65 by the outset of that year. In 2010, 2011 and 2013 taxes for older persons were reduced further. Of the pension-qualifying incomes below the ceiling, roughly 95 percent consist of income from work. With the enactment of the tax deductions, the pension level drops by about 2.7 percentage points if differences in taxation for different types of income are taken into account.

Assumptions in the Calculations for the Three Scenarios

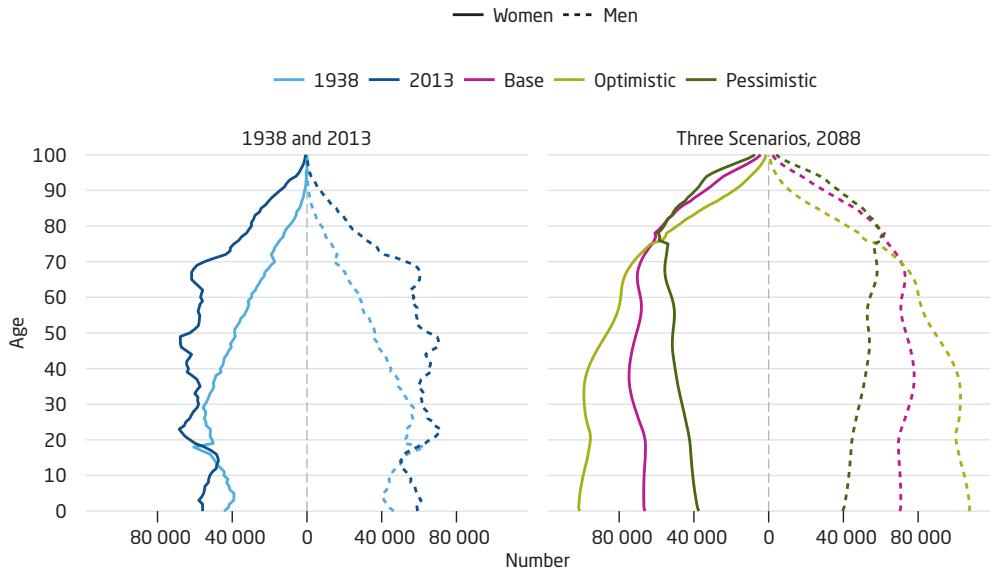
In the table and in the figure below, the various assumptions in the scenarios are summarized.

Bases for Calculation

percent

	Base	Pessimistic	Optimistic
Inflation	2.00	2.00	2.00
Change in average income	1.80	1.00	2.50
Real return, net, after fees to fund management companies			
Premium pension funds	3.25	1.00	5.50
Buffer fund	3.25	1.00	5.50
National Debt Office	2.00	1.00	3.00

Figure 7.10 Population for 1938 and 2013, Projection for 2088 in the Three Scenarios



Base Scenario

The demographic development in the base scenario follows the latest population forecast of Statistics Sweden from 2013. In this projection the birth rate during the period is assumed to be 1.89 children per woman. The average life span for men born in 2013 is 80.2 years and is expected to increase to 85.7 years in 2050. For women the average life span is expected to increase from 83.9 to 87.9 years during the same period. For the remainder of the time until the end of the projection period in 2088, the average life span will increase by approximately 3 years for both men and women. In the past 20 years net immigration has averaged 33,800 persons per year. Since 2006 net immigration has averaged around 50,000 persons per year. In the initial years of the projection through 2017, net immigration is assumed to be 70,000 persons. Between 2017 and 2026, net immigration will gradually decline to 17,500

per year. Employment follows Statistics Sweden's latest employment forecast (main alternative) where the proportion of persons employed increases from today's level mainly among those born abroad, Swedish-born women, and older people. The real average income is assumed to increase by 1.8 percent per year. The real rate of return on the buffer fund is set at 3.25 percent per year. The same return, after costs of administration, has been assumed for the premium pension fund, whereas the National Debt Office is assumed to have an interest rate of 2 percent.

Optimistic Scenario

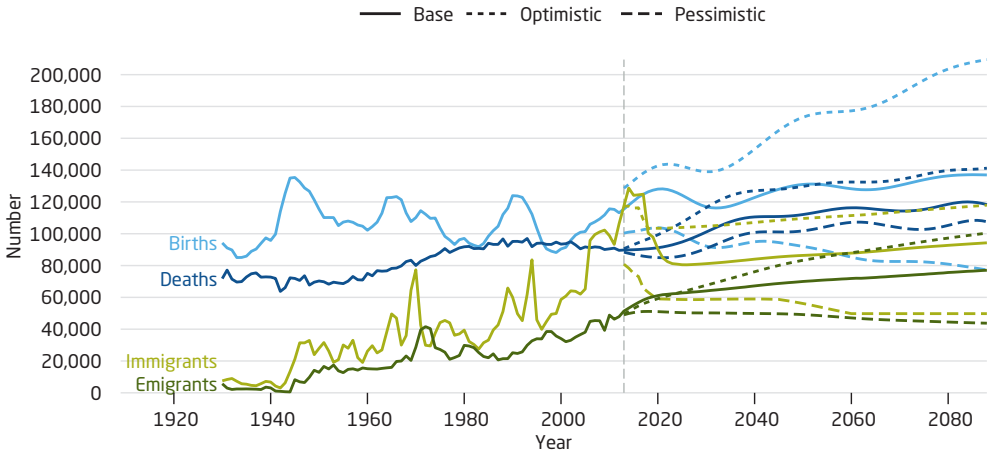
The demographic assumptions do not follow the base scenario and are based on Statistics Sweden's forecasts from 2012. Both nativity and net immigration are higher than in the base alternative. In the long run, nativity is estimated at 2.10 children per woman. Long-term immigration is assumed on average to show a surplus of some 30,000 persons. Mortality is assumed to be constant and to retain the same 2012 values throughout the whole of the forecast period. Employment is assumed to follow the same path as in the base scenario. The real growth in average income is 2.5 percent after 2013, and the real rate of return on the buffer fund is assumed to be 5.5 percent per year in the future. The real return for the premium pension is also assumed to be 5.5 percent, after costs of administration. The National Debt Office is assumed to fix an interest rate of 3 percent.

Pessimistic Scenario

The assumptions in the pessimistic scenario about birth rates and net immigration are lower than in the base alternative. The birth rate is assumed to be 1.65 children per woman. Net immigration drops sharply until 2020, when it stabilizes at around 8,000 per year; it then falls to approximately 5,000 after 2045. The birth rate and migration follow the low assumptions of Statistics Sweden in the population forecast from 2012. Life expectancy increases for women from 84.0 years to 90.6 in 2050. The corresponding ages for men are from 80.3 to 88.6 years. The proportion employed is assumed to remain unchanged for the time ahead. The real growth in average income is assumed to be 1 percent per year. The real rate of return for the Buffer Fund, the National Debt Office and the premium pension funds is also assumed to be 1 percent per year. With a return equal to the growth in average income, the return of the buffer fund does not, in principle, contribute to the long-run financing of pensions. The buffer fund is then demographically determined and serves as a neutral repository of pension capital for the purposes of the system's financing. The assumptions in the pessimistic scenario mean that the contribution flow grows slowly in relation to the desired indexation of the average income. The pessimistic scenario describes how pensions are affected by prolonged weakness in the development of demographic and economic factors.

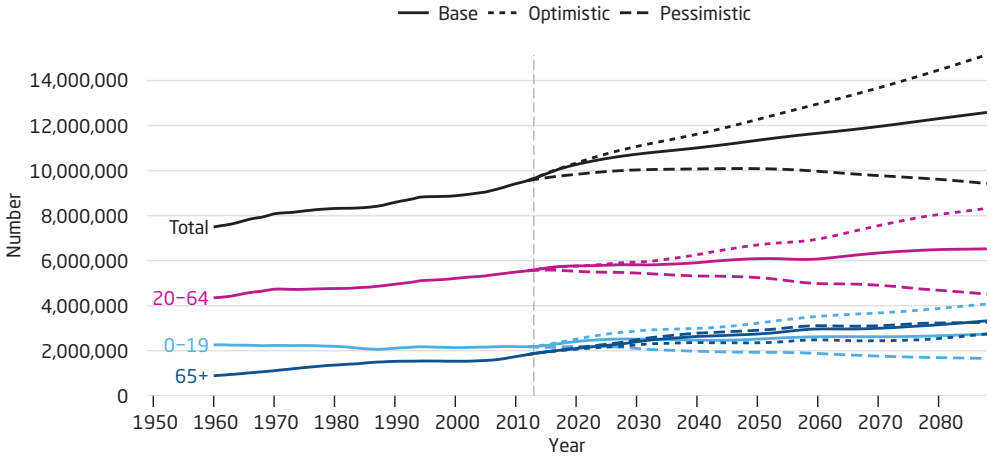
Description of the Assumptions in the Scenarios

Figure 7.11 Births, Deaths, Immigration and Emigration, 1935-2013, and Assumptions Through 2088



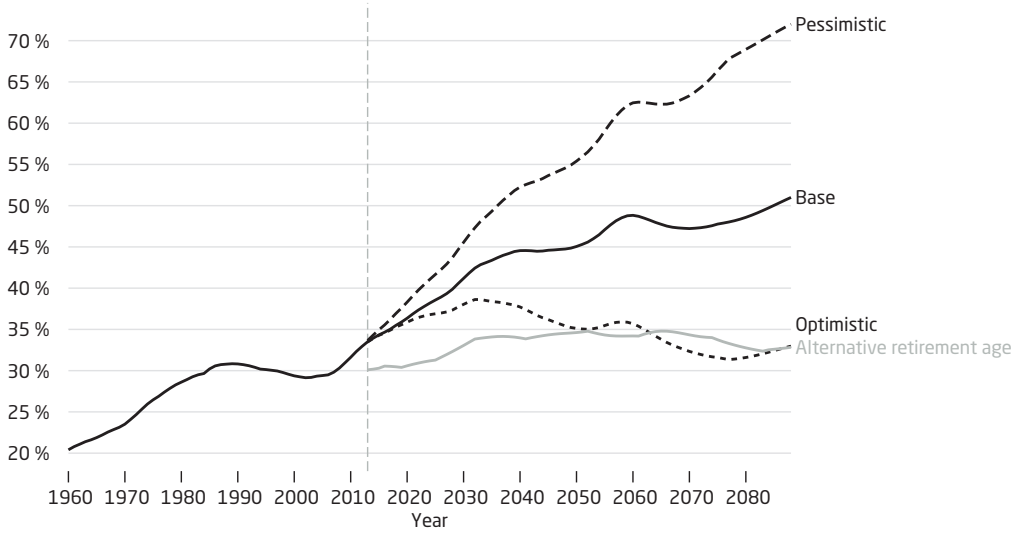
The diagram shows the development of the population since 1930 and the assumptions for 75 years into the future. The large birth cohorts of the 1940's, 1960's, 1990's and 2010's are evident. The number dying increases each year, not because of rising mortality, but because of a growing population. The peak years of immigration are the 1960's and 1970's, when there was substantial immigration of labour, particularly from Finland. There was another peak at the outset of the 1990's, when many refugees arrived, primarily from ex-Yugoslavia. The large immigrant cohorts in recent years are also reflected in the diagram.

Figure 7.12 Size of Population



The total population increases in both the positive and base scenarios, the reasons being a high birth rate and net immigration. The number of persons over 65 is more or less the same from one scenario to another. The historical data are estimates.

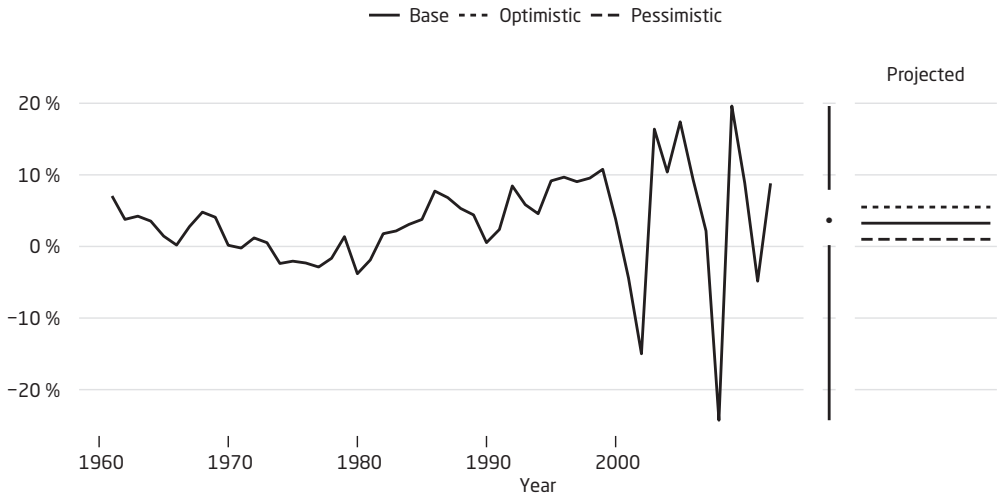
Figure 7.13 Support Ratio During 1960–2013 and Projection According to Statistics Sweden's Three Scenarios for 2013–2088



For the three scenarios the support ratio is calculated as the number of persons 65 years of age or older divided by the number aged 20–64. The support ratio for the base scenario has also been calculated with alternative retirement ages instead of age 65 as a limit. For this curve, a smoothed mean value for the burden of support is used.

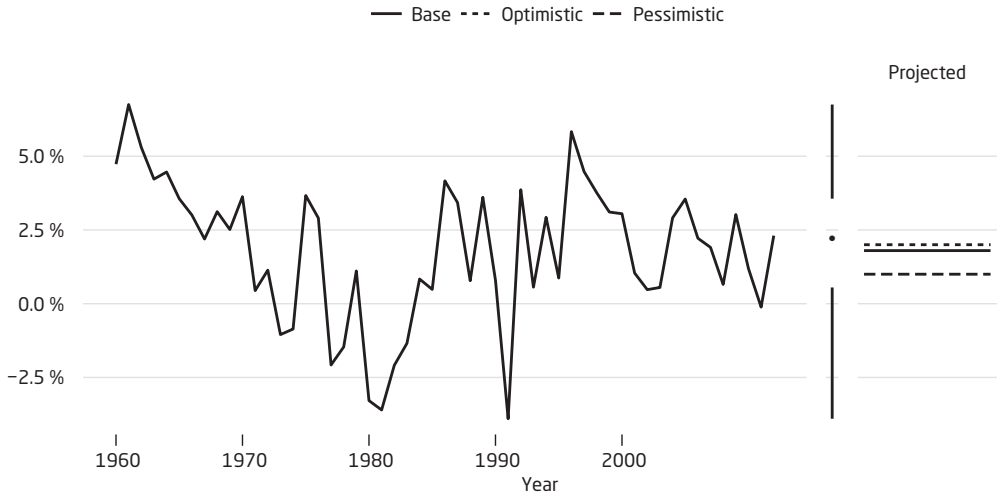
In the calculation of net contribution, fund strength and the balance ratio for the three scenarios, a constant retirement age of 65 is used over the simulation period. If the retirement age is adjusted upward – a likely development in view of increasing life expectancies – this means that the net contribution, fund strength and the balance ratio improve. Figure 7.13 also shows the burden of support calculated with an alternative retirement age instead of 65. Since an entire cohort, those born in 1948, is reclassified from retirement to economically active with an alternative retirement age, the initial value is 3 percentage points lower than for the three scenarios in 2012. With a rising alternative retirement age as life expectancy increases, the burden of support is between 30 and 35 percent. This may be viewed in relation to the rising burdens of support in scenarios with a fixed retirement age of 65 years.

Figure 7.14 Real Return on the Buffer Fund, 1960-2012, and Assumptions until 2087



The historical return of the buffer fund for the last 52 years. The point between the vertical lines is the median value. The starting point for the upper vertical line is the 75th percentile; the ending point is the maximum value. The starting point for the lower vertical line is the 25th percentile; the ending point is the minimum value.

Figure 7.15 Real Growth in Earnings, 1960-2012, and Assumptions until 2087



The development of real earnings for the last 53 years. The point between the vertical lines is the median value. The starting point for the upper vertical line is the 75th percentile; the ending point is the maximum value. The starting point for the lower vertical line is the 25th percentile; the ending point is the minimum value.

8 Notes and Comments

Notes 2–14 relate to the inkomstpension, Notes 15–25 to the premium pension. Note 1 applies to both parts of the income-related national pension system. All amounts are shown in millions of SEK.

Note 1 Pension Contributions

The table below shows pension contributions recorded in 2013 by the Swedish Social Insurance Agency and the Swedish Pensions Agency. Employer contributions or self-employment contributions are recorded by the Social Insurance Agency. The contributions for the inkomstpension system are transferred to the Pensions Agency and thereafter to the National Pension Funds. The contributions calculated as corresponding to the pension credit for the premium pension are forwarded to the National Debt Office. The individual social security contribution and the general old-age pension contributions are recorded with the Pensions Agency before being transferred to the National Pension Funds and the premium pension system, respectively. Of the contributions recorded in a particular year, a portion relate to the preceding year or, in some cases, to several years further back. Employer contributions, for example, are recorded at least one month later than payment of the corresponding earnings.

The general pension contribution is transferred in its entirety to the National Pension Funds. For employer contributions and self-employment contributions, there is a preliminary allocation by set percentages among the National Pension Funds, the premium pension system and the central government budget. The central government old-age pension contributions are preliminarily allocated by set percentages between the National Pension Funds and the premium pension system.

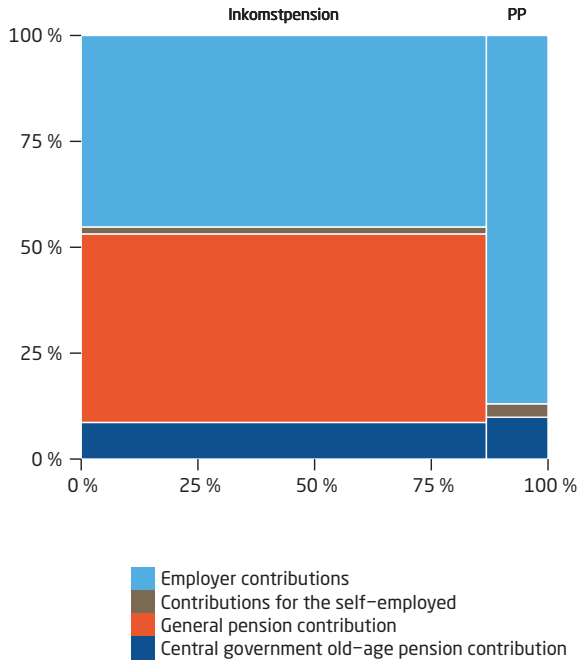
Pension Contributions by Type, 2013 *
millions of SEK

	Inkomst-pension	Premium pension	Central govern-ment budget	Total 2013	Total 2012
Employer contributions	102,827	30,068	16,165	149,060	144,865
Contributions for the self-employed	3,765	1,097	588	5,450	5,523
General pension contribution	101,244	0	0	101,244	97,050
Central government old-age pension contribution	19,662	3,415	0	23,077	24,365
Final settlements etc.	-128	4,000	236	4,108	3,110
Final settlements in 2013 for 2011	-55	-181	236	0	0
Collection loss, settlement	-140	0	0	-140	-327
Adjustment to accounting of National Pension Funds and premium pension system	67	4,181	0	4,248	3,437
Total	**227,370**	**38,580**	**16,989**	**282,939**	**274,913**

* Contributions received by the Swedish Social Insurance Agency/the Swedish Pensions Agency in 2013 and transferred to the National Pension Funds, the premium pension system and the central government budget, respectively.

In the national pension system there are several different kinds of contributions, as can be seen in the table above. Not all contribution revenue goes to the pension system. The portion of the old-age pension contribution allocated to the central government budget is for the portion of income above the ceiling on pension-qualifying income. This ceiling is 8.07 income-related base amounts before deduction of the general pension contribution and 7.5 after this deduction. Since these contributions do not represent pension credit, they are in fact taxes. The old-age pension contribution is paid by employers and self-employed persons; the general pension contribution is paid by all gainfully employed persons earning pension credit. In addition, from various appropriations in the central government budget, the central government pays old-age pension contributions for pension credit arising from certain transfer payments, such as those for sickness and unemployment cash benefits. The central government also pays a pension contribution for so-called pension-qualifying amounts, for years with small children and for study, for example.

Figure 8.1 Pension Contributions



Contribution revenue increased between 2012 and 2013. The reason is that total earnings were up between these two years. The contribution revenue of the inkomstpension system was 2.5 percent higher, whereas total earnings rose by roughly 2.7 percent, according to the National Institute of Economic Research. There are a number of reasons why the National Pension Funds' contribution revenue did not increase as much as total earnings. One reason is that a smaller share of employer contributions and employee social contributions was transferred to the National Pension Funds and a larger share to the premium pension system and national budget compared with the previous year. Another reason is that income from national old-age pension contributions decreased between 2012 and 2013 due to negative settlement amounts for previous years and reduced expenditure on, for example, sickness benefit.

Contributions to the premium pension system rose between 2012 and 2013 by 5.3 percent, considerably more than total earnings. One reason is that a larger share of contributions was transferred to the premium pension system in 2013 than in 2012. Another reason is that apportioned management fees have increased relatively sharply.

To ensure that the premium pension system has received contributions corresponding to the pension credit earned for a particular year and that the central government budget has received contributions for the portion of incomes above the contribution ceiling, the discrepancies are reconciled two years later. A settlement is then made among the central government budget, the premium pension system and the National Pension Funds.

The discrepancy between the accounting for contribution revenue of the Swedish Social Insurance Agency/the Swedish Pensions Agency and that of the National Pension Funds (SEK 67 million) is explainable largely by differences in regard to periodization. The difference between the accounting for contribution revenue of the Swedish Social Insurance Agency/the Swedish Pensions Agency and the reported contribution revenue of the premium pension system (SEK 4,181 million) is explained partly by the inclusion of allocated costs of administration and certain adjustment amounts in the amount for the premium pension system (see Note 18).

Table A Pension Contributions, Excluding Settlements etc. Allocated by Type of Contribution Base, 2013 *
millions of SEK

	Employer, self-employed, and centr. govt. pension contribution	General pension contribution	Total
Earned income [1]	154,510	96,147	250,657
Transfer payments, see Table B	7,299	5,097	12,396
Pension-qualifying amounts, see Table C	15,778	0	15,778
Total	**177,587**	**101,244**	**278,831**

* The allocation of the general pension contribution between the two types of contribution base is estimated and is not shown in the accounting systems.
1 Including sick pay and self-employment income, excluding transfer payments.

The general pension contribution is 7 percent of the sum of earned income and pension-qualifying transfer payments such as sickness cash benefits, but excluding sickness and activity compensation (disability pension). The general pension contribution is assessed only on the portion of such income below the ceiling of 8.07 income-related base amounts.

The pension contribution paid by employers and self-employed on earned income, and by the central government on the above-mentioned transfer payments, is 10.21 percent. The central-government pension contribution on sickness and activity compensation and on so-called pension-qualifying amounts, which are not subject to the general pension contribution, is 18.5 percent.

The allocation in Table A refers to the contributions received by the Swedish Social Insurance Agency or the Swedish Pensions Agency in 2013.

Table B Pension Contributions for Transfer Payments, 2013 *
millions of SEK

	Cent. govt. pension contrib.	General pension contrib.	Total
Sickness cash benefit	2,091	1,455	3,546
Rehabilitation cash benefit	97	68	165
Allowance for care of close relatives	16	11	27
Work injury compensation, etc.	265	184	449
Parental insurance	3,239	2,254	5,493
Care allowance	266	185	451
Unemployment cash benefit etc.	1,324	921	2,245
Educational allowance	0	17	17
Artists' Board	0	2	2
Allowance to disease carriers	1	0	1
Total	**7,299**	**5,097**	**12,396**

* The allocation of the general pension contribution among the different types of transfer payments is estimated and is not shown in the accounting systems.

Table C Pension Contributions Paid for Sickness/Activity Compensation and Pension-Qualifying Amounts, 2013
millions of SEK

Sickness and activity compensation [1]	6975
Amounts credited for years with small children	6,467
Amounts credited for study [2]	2,484
Amounts credited for compulsory national service [2]	-148
Total	**15,778**

1 Amount refers to contributions for disbursements of both pension-qualifying benefits and pension-qualifying amounts. In both cases the contribution is 18.5 percent.
2 A minor portion of amounts credited for study and compulsory national service consists of pension-qualifying income.

Notes and Comments Regarding the Inkomstpension

Note 2 Pension Disbursements etc.

ATP and Inkomstpension Disbursements and Amounts Transferred to the European Community
millions of SEK

	2012	2013
Pension disbursements	236,020	253,960
ATP disbursements	179,953	184,913
Inkomstpension disbursements	56,067	69,047
Transfers to European Communities	19	6
Total	**236,039**	**253,966**

In 2013 a total of SEK 253,960 million in pensions was disbursed from the National Pension Funds, thereby reducing the pension liability to retired persons.

According to the Act (2002:125) on Transfer of Pension Credit to and from the European Communities (EC), the value of pension credit for EC officials can be transferred from the National Pension Funds and the premium pension system to the service pension system of the EC. In 2013, just over SEK 6 million was thus transferred from the National Pension Funds, reducing the pension liability to the economically active. In total, the National Pension Funds were charged with SEK 253,966 million as a result of pension disbursements or transfer of pension credit.

Note 3 Return on Funded Capital

Return on Funded Capital of the First-Fourth and Sixth National Pension Funds, 2013 *
millions of SEK

	First	Second	Third	Fourth	Sixth	*	Total 2013	Total 2012
Stocks and shares	24,494	31,749	29,328	36,747	1,847	-2	124,163	78,299
Dividends received	3,451	3,317	2,854	3,717	31		13,370	12,866
Gain/-loss, listed and unlisted stocks and shares, net	21,043	28,432	26,474	33,030	1,816	-2	110,793	65,433
Bonds and other interest-bearing securities	323	375	532	89	112		1,431	23,671
Net interest	2,494	2,288	2,129	2,478	112		9,501	11,967
Gain/-loss, interest bearing assets, net	-2,171	-1,913	-1,597	-2,389	0		-8,070	11,704
Other investments	1,220	-1,563	2,867	438	22		2,984	-69
Gain/-loss, derivatives, net	2,031	862	4,526	2,805	0		10,224	10,941
Net foreign-exchange gain/-loss	-811	-2,425	-1,659	-2,367	22		-7,240	-11,010
Costs of commissions	-189	-245	-155	-90	0		-679	-506
Total	**25,848**	**30,316**	**32,572**	**37,184**	**1,981**	**-2**	**127,899**	**101,395**

* The adjustments column is included to show the adjustments for effects of rounding off when the funds are added up.
Source: Annual reports of the First, Second, Third, Fourth, and Sixth National Pension Funds, 2012 and 2013.

The item of Gain/-loss, derivatives, net now includes all derivatives; there has therefore been an adjustment of net interest under Bonds and other interest-bearing securities.

The item of Costs of commissions consists of non-result-based charges. Result-based charges, brokerage fees and other expenses have reduced the return (see Costs of Administration and Capital Management).

Note 4 Costs of Administration

Costs of Administration
millions of SEK

	2012	2013
Costs of Insurance administration	879	922
Swedish Pensions Agency	499	542
Tax administration and other agencies [1]	380	380
Costs of fund administration	845	820
First National Pension Fund	177	161
Second National Pension Fund	169	178
Third National Pension Fund	183	173
Fourth National Pension Fund	179	187
Sixth National Pension Fund	137	121
Total	**1,724**	**1,742**

1 Includes Enforcement Authority.

For the First-Fourth National Pension Funds, only internal administrative costs are reported. External costs of administration and custodial fees are referred to as costs of commissions and are reported as negative revenue (see Note 3). The costs of administration for the Sixth National Pension Fund also include certain external costs of administration. For all funds, result-based charges, transaction costs etc. have reduced the return shown in Note 3 (see Costs of Administration and Capital Management).

Owing to phase-in provisions applicable until 2020, only a portion of administrative costs (84 percent in 2013, see Note 11) is charged to the pension balances of the insured. Each fund finances its costs of administration by drawing on its own fund.

Note 5 Value of Change in Contribution Revenue

Smoothed Value of Contribution Revenue *
millions of SEK

	2012	2013
Change in smoothed contribution revenue	3,790	6,815
Smoothed contribution revenue 2013		226,281
Smoothed contribution revenue 2012	219,466	-219,466
Smoothed contribution revenue 2011	-215,676	
(Smoothed turnover duration 2013 + smoothed contrib. duration 2012)/2		x 31.49220
(Smoothed turnover duration 2012 + smoothed contrib. duration 2011)/2	x 31.58193	
Value of change in contribution revenue	**119,696**	**214,619**

* Duration in years.

Basis for Calculating Smoothed Value of Contribution Revenue
millions of SEK

	2010	2011	2012	2013
Pension contributions	205,068	215,575	221,765	227,370
Smoothed contribution revenue	207,619	215,676	219,466	226,281
Consumer Price Index, June	302.97	311.28	314.45	313.99

For the method of calculating smoothed contribution revenue, see Appendix B, Balance Ratio.

Note 6 Value of Change in Turnover Duration

Value of Change in Turnover Duration *
millions of SEK

	2012	2013
Change in smoothed contribution duration	-0.15122	-0.02824
Smoothed contribution duration 2013		31.47808
Smoothed contribution duration 2012	31.50632	-31.50632
Smoothed contribution duration 2011	-31.65754	
(Smoothed contribution revenue 2013 + smoothed contrib. revenue 2012)/2		x 222,874
(Smoothed contribution revenue 2012 + smoothed contrib. revenue 2011)/2	x 217,571	
Value of change in turnover duration	**-32,901**	**-6,294**

* Duration in years.

Basis for Calculating Smoothed Turnover Duration

	2010	2011	2012	2013
Turnover duration	31.50632	31.44136	31.47808	
Pay-in duration	20.62228	20.55182	20.55897	
Pay-out duration	10.88404	10.88954	10.91911	
Smoothed turnover duration	31.66673	31.65754	31.50632	31.47808

Smoothed turnover duration is the median turnover duration for the latest three years. The method of calculating turnover duration is described in Appendix B, Turnover Duration. Since pay-in duration cannot be calculated until all pension credit has been confirmed, the most recent year for which turnover duration can be determined is the year immediately prior to the accounting year.

Note 7 New Pension Credit and ATP Points

The items of New Pension Credit and ATP points have been adjusted upward by certain other amounts that have affected the size of the pension liability. These adjustment amounts are explained in the tables below.

Value of New Pension Credit
millions of SEK

	2012	2013
Estimated inkomstpension credit earned	216,804	223,924
Estimated value of ATP points earned	2,020	1,350
Adjustment amount, new pension credit	6,307	9,045
Confirmed inkomstpension credit earned in 2012	208,646	218,596
Estimated inkomstpension credit earned in 2012	-208,967	-216,804
Adjustments affecting pension balances, etc.	-2,583	-2,822
Change in amounts disbursed	9,211	10,075
Adjustment amount, new ATP points	2,967	7,708
Effect of difference between assumed value for 2013 and estimate for 2012, etc.	-2,487	3,847
Value of other paid-in pension contributions for ATP [1]	2,250	1,634
Change in amounts disbursed	3,204	2,227
Total	**228,098**	**242,027**

1 Excluding value of ATP points.

Since the tax assessment for the year of the financial statements had not been completed when the statements were prepared, the value of pension credit earned during this year can only be estimated. The adjustments affecting the size of pension balances also represent tax-assessment changes etc.; see Note 14, Table A. The change in disbursed amounts refers to changes in the pension liability to retirees as a consequence of other changes in disbursements than those due to indexation; see Note 14, Table C.

Of the ATP points earned during a single year, only a minor portion will have any impact on future pensions. The portion estimated to contribute to higher pensions has been reported in Note 14, Table B, as the estimated value of ATP points earned. However, all pension contributions relating to ATP contribute to an increase in the estimated pension liability. The last year for which ATP points may be earned is 2017. This means that pension contributions, except for administratively caused discrepancies, will not be equal in amount to the pension credit earned until 2018.[1]

[1] Paid-in contributions for ATP exceed the value of ATP pension points earned. The explanation for this difference is that in the ATP system, pension credit is often earned relatively early in working life. Individuals aged 55 who are already past their 15 best pay-in years (and who have worked for at least 30 years) cannot increase their ATP pension at all, even if they keep working and paying contributions until age 65. This situation illustrates one of the disincentives in the ATP system for older members of the work force to contribute to the labour supply.

Note 8 Indexation

Indexation, 2013
millions of SEK

	Active	Retired	Toral
Inkomstpension, indexation	-51,828	49,402	-2,426
Effect of income index	22,592	31,762	54,354
Effect of balance ratio	-74,420	17,640	-56,780
ATP, indexation	-3,767	102,334	98,567
Effect of income index	1,642	65,412	67,054
Effect of balance ratio	-5,409	36,330	30,921
Effect of price index		592	592
Toral	**-55,595**	**151,736**	**96,141**

Indexation, 2012
millions of SEK

	Active	Retired	Toral
Inkomstpension, indexation	253,264	36,097	289,361
Effect of income index	162,828	34,334	197,162
Effect of balance ratio	90,436	1,763	92,199
ATP, indexation	23,393	90,686	114,079
Effect of income index	15,040	85,194	100,234
Effect of balance ratio	8,353	4,374	12,727
Effect of price index		1,118	1,118
Toral	**276,657**	**126,783**	**403,440**

Inkomstindex och balanstal som 2013 har påverkat pensionsskulden
percent

	Active	Retired
Income index	0.5	3.7
Balanseringseffekt	-1.6	2.0
Total	**-1.1**	**5.8**

The pension liability changes by the change in the income index unless balancing is activated in the system. When balancing is activated, the pension liability changes instead by the balance index (except for the ATP liability for individuals under age 65). The change in the balance index consists of the change in the income index multiplied by the current balance ratio. The value of indexation refers to the indexation that has affected the pension liability as of December 31, 2013. The pension liability to the economically active as of December 31, 2013 has been credited with a return in accordance with the change in the balance index between 2013 and 2014, which was -1.1 percent, with the change in the income index accounting for 0.5 percent and the balance ratio, for -1.6 percent. The pension liability to retirees as of the same date is recalculated by the change in the balance index at year-end 2012, which

was 5.8 percent. For those who have drawn a ATP before age 65, the pension liability is indexed by the change in the price-related base amount until they reach age 65.

Note 9 Value of the Change in Life Expectancy

Value of the Change in Life Expectancy, 2013
millions of SEK

	Active	Retired	Total
Inkomstpension		5,263	5,263
ATP	993	9,808	10,801
Total	**993**	**15,071**	**16,064**

Value of the Change in Life Expectancy, 2012
millions of SEK

	Active	Retired	Total
Inkomstpension		3,914	3,914
ATP	1,287	7,679	8,966
Total	**1,287**	**11,593**	**12,880**

As used here, the term "life expectancy" refers to the assumed length of time for which an average pension amount is disbursed: turnover duration, or so-called economic life expectancy, which is expressed in terms of an economic annuity divisor. In the calculation of these divisors, consideration is given to the advance rate of 1.6 percent. The method of calculating economic annuity divisors is shown in formula B.6.4 in Appendix B.

A higher economic life expectancy will increase the ATP liability, both to the economically active and to retirees. For the inkomstpension system, only the pension liability to retirees increases if life expectancy goes up.

The value of the change in life expectancy is the difference between the pension liability calculated with the economic annuity divisors used in the year of the financial statements, and the pension liability calculated with the economic annuity divisors used in the previous year.

Note 10 Inheritance Gains Arising, Inheritance Gains Distributed

Inheritance Gains, Arising and Distributed
millions of SEK

	2012	2013
Inheritance gains arising	11,353	12,055
60 years or older	4,794	5,166
Younger than 60 years [1]	6,559	6,889
Inheritance gains distributed	13,400	14,264
60 years or older	6,766	7,286
Younger than 60 years	6,634	6,978

1 Died last year, distributed current year.

The pension balances of deceased persons (inheritance gains arising) are distributed to the survivors of the same age. The distribution is made as a percentage increase in pension balances according to an inheritance gain factor. Until the year when a birth cohort reaches age 60, the inheritance gains distributed are those actually arising. Because of the taxation procedure, allocation lags by one year. The inheritance gain factor is thus determined by the total pension balances of decedent persons of the same age. The inheritance gains from persons dying before their 60th year in 2012 (born in 1953 or later) were distributed to the respective birth cohorts in 2013. The difference between inheritance gains arising and inheritance gains distributed is explainable in part by the annual adjustment of pension balances for changes in tax assessments.

Beginning with the year when a birth cohort reaches age 60, the inheritance gains distributed are not those actually arising, but those expected to arise. Inheritance gain factors are estimated on the basis of the mortality observed by Statistics Sweden for an earlier period. Partly because this mortality will not be exactly the same as actual mortality in the year concerned, there is a discrepancy between inheritance gains arising and inheritance gains distributed. For those dying in their 60th year or at a higher age in 2013 (born in 1953 or earlier), the inheritance gains are distributed in the same year.

Note 11 Deduction for Costs of Administration

Deduction for Costs of Administration
millions of SEK

	2012	2013
Deduction for Costs of Administration	1,391	1,414

Costs of administration are financed by a percentage deduction from the pension balances of the insured. In order to avoid charging a disproportionately high cost to younger birth cohorts during the period when the ATP is being phased out, this administrative cost deduction is being introduced in steps. In 2013, 84 percent of administrative costs were financed by a deduction from pension balances. This deduction will increase by 2 percentage points each year and thus will not cover 100 percent of administrative costs until 2021.

The calculation of the administrative cost factor is based on budgeted costs of administration, costs of the National Pension Funds for the current year and the pension balances for the preceding year (see Appendix A). The difference between the monetary amount of the deduction made and the cost confirmed is considered in the in the calculation of the administrative cost factor for the following year.

The deduction for administrative costs is made by multiplying pension balances by the administrative cost factor. The deduction in 2013 was 0.0307 percent and totalled SEK 1,414 million. In 2012 the deduction was 0.0300 percent.

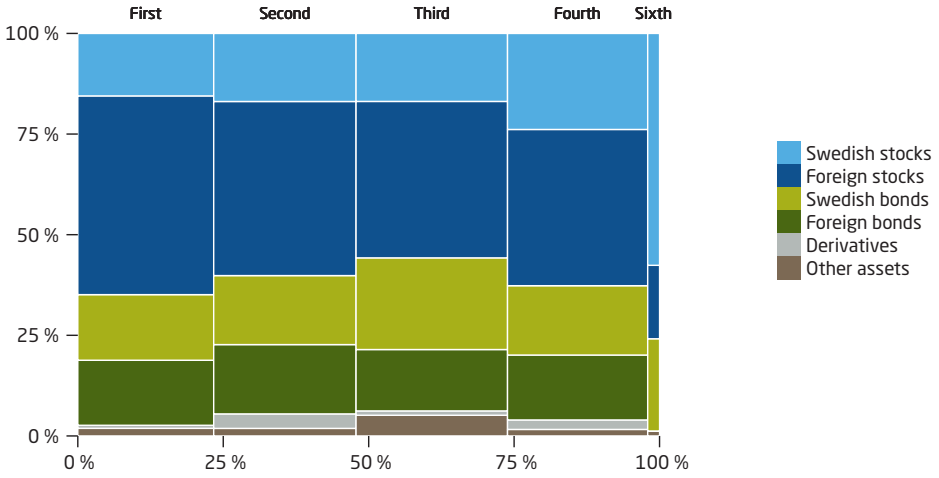
Note 12 Fund Assets

Assets and Liabilities of the Buffer Fund, 2013

millions of SEK

	First	Second	Third	Fourth	Sixth	Total 2013	Total 2012
Assets							
Stocks and shares	164,606	159,843	157,601	163,955	16,788	662,793	552,821
Swedish	39,365	44,928	47,751	62,413	12,750	207,207	172,656
Foreign	125,241	114,915	109,850	101,542	4,038	455,586	380,165
Bonds and other interest-bearing securities	82,327	91,279	107,494	87,254	5,072	373,426	375,035
Swedish issuers	41,331	45,545	64,403	45,065	5,072	201,416	193,354
Foreign issuers	40,996	45,734	43,091	42,189		172,010	181,681
Derivatives	1,926	9,582	3,081	6,185		20,774	28,174
Other assets	4,796	4,990	14,519	4,228	273	28,806	32,494
Total Assets	**253,655**	**265,694**	**282,695**	**261,622**	**22,133**	**1,085,799**	**988,524**
Liabilities							
Derivatives	-241	-897	-1,899	-1,755		-4,792	-2,835
Others	-907	-85	-22,321	-119	-24	-23,456	-27,699
Total Liabilities	**-1,148**	**-982**	**-24,220**	**-1,874**	**-24**	**-28,248**	**-30,534**
Total	**252,507**	**264,712**	**258,475**	**259,748**	**22,109**	**1,057,551**	**957,990**

Figure 8.2 Fund Assets



Other assets include cash and bank balances, prepaid expenses and accrued revenue etc. Liabilities, aside from derivative instruments, include other liabilities, prepaid revenue and accrued expenses.

Note 13 Contribution Asset

Smoothed Contribution Asset *
millions of SEK

	2012	2013
Smoothed contribution revenue	219,466	226,281
Smoothed turnover duration	x 31.50632	x 31.47808
Smoothed Contribution Asset	**6,914,567**	**7,122,892**

* Duration in years.

See Notes 5–6 and Appendix B for the values and formulas used in calculating smoothed contribution revenue and turnover duration.

Note 14 Pension Liability

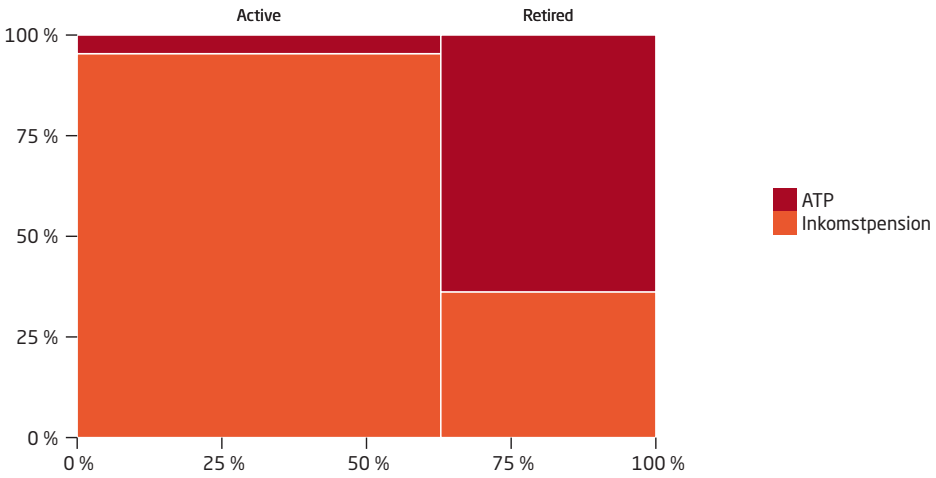
Pension Liability, 2013
millions of SEK

	Active	Retired	Total
Inkomstpension	4,828,158	1,083,038	5,911,196
ATP	233,643	1,908,544	2,142,187
Total	**5,061,801**	**2,991,582**	**8,053,383**

Pension Liability, 2012
millions of SEK

	Active	Retired	Total
Inkomstpension	4,851,107	892,535	5,743,642
ATP	326,314	1,882,360	2,208,674
Total	**5,177,421**	**2,774,895**	**7,952,316**

Figure 8.3 Pension Liability, 2013



The pension liability to retirees for the ATP and the inkomstpension is calculated in the same manner for both. The liability to an annual cohort is calculated as the product of the cohort's pension disbursements in December, the number 12 and the cohort's economic life expectancy. The total liability to retirees is sum of the pension liabilities to the birth cohorts. Economic life expectancy is expressed as an economic annuity divisor. The inkomstpension liability to the economically active consists of the total pension balances of all insured persons in this category as of December 31, 2013, with the addition of the estimated pension credit earned in 2013. The method of calculating the pension liability to the economically active and to retirees, as well as the economic annuity divisors, is shown in Appendix B, formula B.6.1–B.6.4.

The ATP liability to the economically active cannot be calculated directly from the data in the records of pension credit earned. In order to determine the ATP liability, an estimate is made of the ATP of every individual (born between 1938 and 1953) in the year when they reach 65. The estimated annual amount is multiplied by the economic annuity divisor for 65-year-olds in the year of the accounts. Persons older than 65 who have not yet begun to draw their entire pension at the time of calculation are assumed to do so in the following year. To obtain the present value of the estimated pension liability, the liability is reduced by the individual's expected future contributions and discounted by an assumed future increase in the income index. In the calculation it is assumed that the average income will increase by 2 percent annually. The ATP liability to the economically active will gradually diminish with the phase-out and will in principle be gone entirely by 2018.

Table A Analysis of the Change in Inkomstpension Liability to the Economically Active *
millions of SEK

	2012	2013
Inkomstpension liability to the economically active, December 31, 2012	4,555,840	4,851,107
Of which estimated inkomstpension credit earned in 2012	-208,967	-216,804
Pension balances as of December 31, 2012	**4,346,873**	**4,634,303**
Inheritance gains arising from persons dying before age 60 [1]	-6,559	-6,889
Adjustments affecting pension balances [2]	-361	-290
Opening pension balance, 2013	**4,339,953**	**4,627,124**
Inheritance gains arising, persons dying at or after age 60	-4,794	-5,166
Changes in tax assessments etc. affecting pension balances	-2,222	-2,532
Confirmed inkomstpension credit earned in 2012	208,646	218,596
Distributed inheritance gains from persons dying at or after age 60	6,766	7,286
Distributed inheritance gains from persons dying before age 60	6,634	6,978
Indexation	253,264	-51,828
Deduction for administrative costs	-1,391	-1,414
Pensions drawn	-173,610	-196,048
Pensions revoked	1,057	1,238
Pension balances as of December 31, 2013	**4,634,303**	**4,604,234**
Estimated inkomstpension credit earned in 2013	216,804	223,924
Inkomstpension liability to the economically active	**4,851,107**	**4,828,158**

* The figures for 2012 are shown only for comparison.
1 Distributed in 2013.
2 Transfers to the European Communities (see Note 2), adjustments for deceased persons, sealed cases, etc.

Table B Analysis of the Change in ATP Liability to the Economically Active *
millions of SEK

	2012	2013
ATP liability to the economically active, December 31, 2012	409,316	326,314
Effect of difference between assumption for 2013 and estimate in 2012 etc.	-2,487	3,847
Opening ATP liability, 2013	**406,829**	**330,161**
Indexation	23,393	-3,767
Estimated value of paid-in contributions for the ATP, 2013	2,020	1,350
Pensions drawn	-109,465	-96,728
Value of other paid-in pension contributions for the ATP, 2013	2,250	1,634
Value of change in life expectancy	1,287	993
ATP liability to the economically active	**326,314**	**233,643**

* The figures for 2012 are shown only for comparison.

Table C Analysis of the Change in Pension Liability to Retirees, ATP and Inkomstpension, 2013
millions of SEK

	Inkomstpen-sion	ATP	Total
Pension liability to retirees, December 31, 2012	892,535	1,882,360	2,774,895
Additional liability to the economically active [1]	194,810	96,728	291,538
Change in amounts disbursed	10,075	2,227	12,302
Pensions disbursed [2]	-69,047	-184,913	-253,960
Indexation	49,402	102,334	151,736
Value of change in life expectancy	5,263	9,808	15,071
Total	**1,083,038**	**1,908,544**	**2,991,582**

1 Inkomstpension: Net of Pensions drawn and Pensions revoked, see Table A. ATP: See Table B.
2 See Note 2.

The liability to retirees is changed by indexation, increased by higher life expectancy and decreased by disbursements made during the year. Pension amounts can change for reasons such as new pension credit earned, changes in marital status (applies to the ATP), changes in taxation etc. Such changes in liability are reported as changes in disbursements (changes in amounts). The liability to retirees also increases with the approval of new pensions; this increase in the pension liability is accompanied by a corresponding reduction in the pension liability to the economically active.

Notes and Comments Relating to the Premium Pension

Note 15 Pension Disbursements

Pension Disbursements Premium Pension
millions of SEK

	2012	2013
Pension disbursements	2,298	3,196
Fund insurance	1,918	2,732
Conventional insurance	380	464
Transfers to European Communities	1	1
Total	**2,299**	**3,197**

At the time of retirement, a pension saver has the option of retaining her/his accumulated balance in fund insurance; the amount of the pension will then depend on the rate of return of the funds chosen by the saver. The other option is to switch to conventional insurance, either on retirement or later. With conventional insurance, the pension is disbursed as a nominal guaranteed monthly amount. If the management of the conventional insurance capital achieves a return higher than the guaranteed rate, pension savers will receive a rebate in the form of a monthly supplement, which may vary from year to year. In 2013, SEK 209 million was disbursed in supplementary amounts, as shown in Note 23. In 2012 the supplementary amount was SEK 166 million.

According to the Act (2002:125) on Transfer of Pension Credit to and from the European Communities (EC), the value of pension credit for EC officials can be transferred from the National Pension Funds and the premium pension system to the service pension system of the EC. In 2013 the sum of SEK 1 million was transferred from the premium pension system.

Note 16 Return on Funded Capital

Return on Funded Capital, 2013
millions of SEK

	Fund Insurance	Conventional insurance	Total 2013	Total 2012
Return				
Stocks and shares	99,710	793	100,503	47,899
Direct return	59	10	69	6,914
Realized and unrealized capital gains	99,651	783	100,434	40,985
Bonds and other interest-bearing securities	306	-2	304	771
Direct return (net interest)	11	-2	9	9
Realized and unrealized capital gains	295		295	762
Net foreign-exchange gain/-loss	-714		-714	-844
Total Return	**99,302**	**791**	**100,093**	**47,826**
Change, conventional insurance		**1,573**	**1,573**	**1,021**
Total	**99,302**	**2,364**	**101,666**	**48,847**

The return earned includes realized and unrealized foreign-exchange gains and losses after deduction of fund management costs. The average fund management cost after deduction of rebates is 0.31 percent of average capital.

The pension liability was changed by the return on the premium pension funds, which totals SEK 100,093 (47,826) million.

Note 17 Costs of Administration

Costs of Administration
millions of SEK

	2012	2013
Operating expenses	358	342
Financial items, net	37	21
Total	**395**	**363**

The item of Financial items, net, refers primarily to borrowing expenses, gain/-loss on trade inventories and interest revenue (net). Costs of fund management are paid directly from insurance assets and are not included in the premium pension system's operating expenses. Total costs of administration in 2013 were SEK 350 million, of which SEK 8 million are included in Note 16, Change, conventional insurance. The corresponding amount for costs of administration in 2012 was SEK 366 million, of which SEK 8 million are included in Note 16. A presentation of the respective gross and net reported costs is provided in the chapter Costs of Administration and Capital Management.

Note 18 New Pension Credit

New Pension Credit
millions of SEK

	2012	2013
Preliminary contribution revenue, including interest on the premium pension earned in 2013/2012	33,108	34,272
Adjustment amount, confirmed pension credit	1,370	1,683
Confirmed pension credit, including interest, for the premium pension earned in 2010/11 and 2011/12	32,883	34,791
Preliminary contribution for the premium pension earned in 2010/11 and 2011/12	-31,513	-33,108
Change in pension credit	3	14
Allocated management fees, etc.	2,158	2,611
Total	**36,639**	**38,580**

In the operations of the premium pension system, the equivalent of contribution revenue is new pension credit including interest for the period during which the contribution moneys are managed before being invested in the funds chosen by the insured. During the year, changes in pension credit have come from previous earning years and the allocated return of fund management fees.

Note 19 Inheritance Gains Arising, Inheritance Gains Distributed

Inheritance Gains, Arising and Distributed
millions of SEK

	2012	2013
Inheritance gains arising	1,062	1,152
Inheritance gains distributed	1,062	1,152

Inheritance gains arising and distributed are analogous to decedents' capital. Inheritance gains are distributed once a year; in addition, a minor portion is distributed during the course of the year in connection with changeovers from fund insurance to conventional insurance. In 2013 inheritance gains distributed were SEK 1,152 million; this amount was determined by the sum of the capital released by deaths in calendar year 2012. The corresponding amount distributed in 2012 was SEK 1,062 million. Inheritance gains distributed in 2013 (2012) include SEK 27 (19) million related to changeovers from fund insurance to conventional insurance. This item also includes reductions in premium pension credit when premium pensions are transferred between spouses. In calendar year 2013 a total of 8,392 persons transferred an aggregate amount of SEK 68 million between spouses or registered partners. (The corresponding numbers for 2012 were 8,348 people and SEK 64 million).

Note 20 Deduction for Costs of Administration

Costs of Administration
millions of SEK

	2012	2013
Deduction for costs of administration	426	474

The amount of SEK 474 (426) million is for the fees deducted by the Swedish Pensions Agency to finance the costs of administration for the premium pension system in 2013 (2012). The average fee for 2013 (2012) was equivalent to 0.10 (0.10) percent of pension savers' account balances with a ceiling of SEK 110 (110). During the build-up phase and until 2018, the premium pension system will be financed by a combination of fees deducted, interest-bearing overdrafts for working capital needs and borrowing within authorized limits from the National Debt Office. The amount of the fee deducted is based on the cost level forecast for 2013.

Note 21 Insurance Assets

Insurance Assets, 2013
millions of SEK

	Fund insurance	Conventional insurance	Temporary management	Total 2013	Total 2012
Stocks and shares	561,797	5,023		566,820	440,611
Bonds and other interest-bearing securities	40,063	7,863	32,034	79,960	72,680
Trade in progress and inheritance gains arising	1,680	21		1,701	1,469
Total	**603,540**	**12,907**	**32,034**	**648,481**	**514,760**

Inheritance gains arising for 2013 (2012) total SEK 1,321 (1,105) million. Fund insurance accounts for SEK 1,321 (1,051) million, conventional insurance for SEK 70 (54) million. The gains will be distributed to pension savers in 2014 (distributed in 2013).

Temporary management of preliminary contributions refers to income year 2013. As of December 31, 2013, the number of premium pension savers totalled 6,747,873, of whom 6,518,628 had invested their savings in fund insurance and 229,245 in conventional insurance. The number of premium pension savers receiving pension disbursements was 1,141,727.

Note 22 Other Assets

Other Assets
millions of SEK

	2012	2013
The Swedish Pensions Agency's administrative inventory of fund shares (trading inventory)	58	89
Other assets	2,897	3,627
Total	**2,955**	**3,716**

The Swedish Pensions Agency's administrative inventory of fund shares facilitates trade in fund shares by reducing the number of trading transactions with fund managers.

Other assets consist of cash and bank balances, fund trading in progress, other receivables and accrued interest revenue.

Note 23 Change in Owner Equity

Change in Owner Equity, 2013
millions of SEK

	Fund insurance	Conventional insurance	Total 2013	Total 2012
Opening owner equity:				
Consolidation fund	-991	3,225	2,234	1,348
Rebate paid from consolidation fund		-209	-209	-166
Net income for the period	111	1,573	1,684	1,052
Total owner equity	**-880**	**4,589**	**3,709**	**2,234**

The Swedish Pensions Agency reports a negative owner equity overall for fund insurance operations. The solvency provisions in the Insurance Businesses Act do not apply to the Swedish Pensions Agency; through 2018 negative results brought forward (accumulated deficits) will be financed by overdrafts with the National Debt Office. It is expected that a balance between assets and liabilities will be reached by 2018. Conventional insurance reports a positive result that will be added to the consolidation fund under Owner equity. The amounts in the consolidation fund are distributed to pension savers as refunds in connection with pension disbursements.

Note 24 Pension Liability

Pension Liability
millions of SEK

	2012	2013
Fund insurance	472,434	603,540
Conventional insurance	7,629	8,310
Liabilities in regard to preliminary contributions	31,459	32,039
Total	**511,522**	**643,889**

The pension liability is a liability to economically active and to retired pension savers. The item of Pension liability, fund insurance, is linked primarily to fund shares and is affected by the development of the market value of the funds chosen. Fund holdings are valued at the price quoted on the closing day of the accounts and correspond to the value of insurance assets in Note 21.

The item of Pension liability, conventional insurance, is calculated for each pension saver choosing this form of insurance as the capital value of the remaining guaranteed disbursements. The value is calculated on assumptions about future return, life expectancy and operating expenses; the value of the asset is shown in Note 21.

Information on how the economic annuity divisors for fund insurance and conventional insurance are calculated is found in Appendix A.

Liabilities in regard to preliminary contributions correspond to the assets invested under temporary management; the value of these assets can be found in Note 21.

Table A Pension Liability, 2013
millions of SEK

	Fund insurance	Conventional insurance	Liabilities in regard to preliminary contributions
Premium pension capital, December 31, 2013	603,541	8,310	32,039
Pension liability, December 31, 2012	472,434	7,629	31,459
Change in value	99,302	791	-358
Confirmed premium pension credit earned in 2012	34,512	279	-33,458
Preliminary contributions, premium pension, earned in 2013			34,272
Management fees allocated, etc.	2,603	8	
Inheritance gains arising	1,078		
Settlement, preliminary contributions, previous years			134
Change in pension credit for the premium pension	14	0	
Decrease in liability because of pensions drawn in 2013	-2,732	-464	
Switch to conventional insurance / from fund insurance	-2,092	2,092	
Inheritance gains distributed [1]	-1,078	-74	
Deduction for costs of administration	-474		
Change in pension liability [2]		-1,951	
Other	-26	0	-10
Adjustment affecting premium pension capital [3]	-1		
Total	**603,540**	**8,310**	**32,039**

1 Inheritance gains, capital released in 2012, to be allocated in 2013.
2 Costs of administration, SEK -8 million, are included in the change of the pension liability; see Note 17.
3 Amounts transferred to the European Communities, etc.

The pension liability is changed by new pension credit earned, preliminary contributions, changes in the extent of pension withdrawal, changes in pension credit due to changes in taxation, changes in value of assets, costs of administration, pension disbursements and estimates of future mortality for the insured.

Note 25 Other Liabilities

Other Liabilities
millions of SEK

	2012	2013
Other liabilities	3,926	4,565
Share of consolidated Swedish Pensions Agency assets, liabilities and result, net	33	34
Total	**3,959**	**4,599**

Other liabilities consist chiefly of fund trading in progress, borrowings from the National Debt Office, accrued management fees and accrued interest fees.

The accounting for the premium pension's share of the Swedish Pensions Agency's joint assets, liabilities and results has been simplified so that a net amount is reported; it is included so that the balance sheet will balance.

Appendix A Calculation Factors

The Social Insurance Code 58 Ch. 10 § (SFB) (2010:110) requires that the income index be calculated for each year. By Government decision, the Swedish Pensions Agency is to calculate and prepare proposals for an income index, which the Government then confirms. In addition, the Agency is required by the Regulations for the Earnings Related Old Age Pension (1998:1340) to calculate and confirm factors for inheritance gains, administrative costs and annuity divisors.

According to 64 Ch. 3 § SFB, premium pension operations are to be conducted according to sound insurance principles. These principles, as interpreted by the Swedish Pensions Agency, govern the calculation of the bonus rate, inheritance gains and annuity divisors for the premium pension. Further, the Swedish Pensions Agency is to calculate the fee that will finance premium pension operations.

Income Index

The change in the income index shows the development of the average income. Here, income refers to pension-qualifying income without limitation by the ceiling, but after deduction of the individual pension contribution.

$$I_t = \left(\frac{u_{t-1}}{u_{t-4}} \times \frac{KPI_{t-4}}{KPI_{t-1}}\right)^{\frac{1}{3}} \times \frac{KPI_{t-1}}{KPI_{t-2}} \times k \times I_{t-1} \qquad \text{(A.1.1)}$$

$$u_t = \frac{Y_t}{N_t} \qquad \text{(A.1.2)}$$

t	calendar year
I_t	income index year t
KPI_t	consumer price index for June of year t
k	adjustment factor for error in estimation in u_{t-2} and u_{t-3}
Y_t	total pension-qualifying income without limitation by the ceiling, person aged 16–64 in year t, after deduction of the individual pension contribution
N_t	number of persons aged 16–64 with pension-qualifying income in year t

The change in the index consists of two parts. The first is the average annual change in average income for the latest three-year period, excluding inflation; the second is inflation for the latest 12-month period ending in June. Pension-qualifying income is not known until after the final tax assessment, i.e. in December of the year following the income year. This means that the income for the two most recent years is based on estimates. Errors in estimates are corrected in the indices for subsequent years. Inflation for the three-year period is excluded, and the inflation for the most recent year is restored, to permit more rapid adjustment of pensions to changes in the inflation rate than would have resulted with a "pure" three-year moving average for the development of income.

The change in the income index between year $t - 1$ and year t affects the pension liability to retirees in year t via adjustment indexation of inkomstpension and ATP disbursements (see Note 8 and Note 14, Table C). The change in the income index between years t and $t + 1$ affects the inkomstpension liability to the economically active in year t via income indexation of pension balances (see Note 8 and Note 14, Table A).

Balance Index

When balancing is activated, the balance index is used instead of the income index.

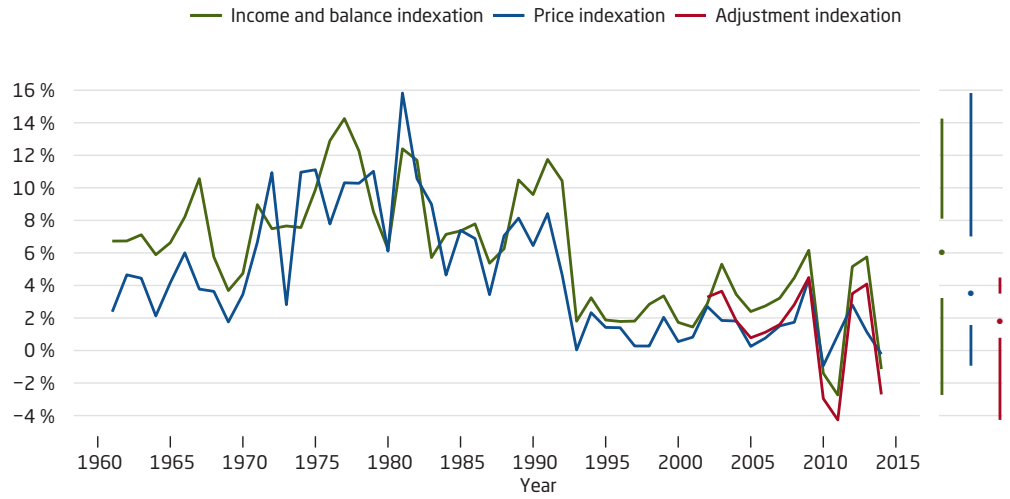
$$B_t = I_t \times BT_t \tag{A.2.1}$$

$$B_{t+1} = B_t \times \left(\frac{I_{t+1}}{I_t}\right) \times BT_{t+1} = I_{t+1} \times BT_t \times BT_{t+1} \tag{A.2.2}$$

B_t balance index year t
I_t income index year t
BT_t balance ratio t

At the turn of the year $(t - 1) \rightarrow t$, indexation takes place via multiplication of pensions by the ratio between the balance index for year t and the income index for year $t-1$ divided by 1.016, and of pension balances by the ratio between the balance index for year t and the income index for year $t - 1$. At the end of year t, there is analogous indexation of the ratio between the balance index for year $t + 1$ and the balance index for year t. Indexation by the balance index ceases when the product of the balance indices is ≥ 1, that is, when the balance index reaches the level of the income index.

Figure A.1 Indexation



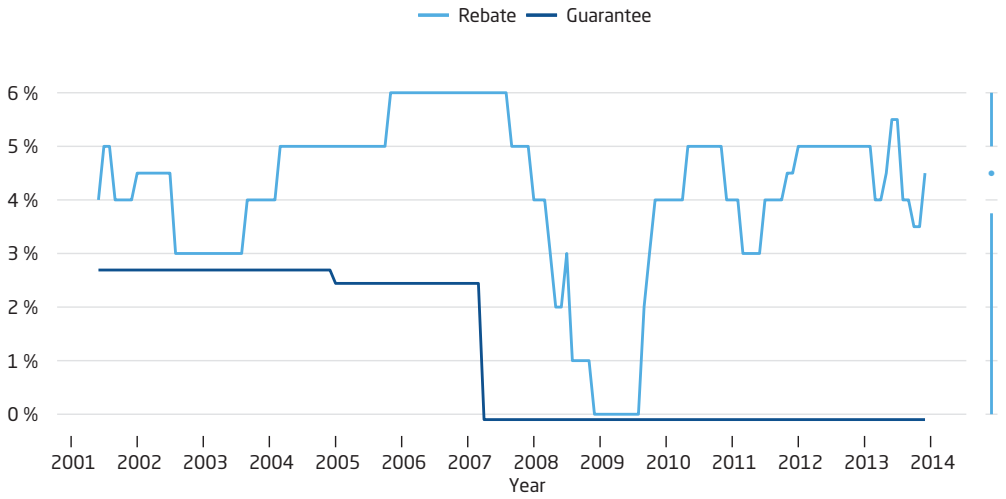
The point between the vertical lines is the median value. The starting point for the upper vertical line is the 75th percentile; the ending point is the maximum value. The starting point for the lower vertical line is the 25th percentile; the ending point is the minimum value.

Bonus Rate

In the premium pension system the amount disbursed is recalculated each year. In the case of conventional insurance, the amount may be higher than the guaranteed pension if the insurance business achieves a better result than was assumed when the guaranteed amount was calculated. The result of the conventional insurance business is reflected in the bonus rate used to raise the value of the conventional insurance.

The bonus rate does not affect the amount of the life-insurance provisions since the pension liability is calculated on the basis of the guaranteed amount.

Figure A.2 Rate of Rebate and Guarantee



The point between the vertical lines is the median value. The starting point for the upper vertical line is the 75th percentile; the ending point is the maximum value. The starting point for the lower vertical line is the 25th percentile; the ending point is the minimum value.

Inheritance Gain Factors for the Inkomstpension

The pension balances of deceased persons are credited to the survivors in the same age group in the form of inheritance gains. For the economically active, this is done through multiplying the pension balances of the survivors by an annually calculated inheritance gain factor for the inkomstpension.

$$AF_{i,t} = \begin{cases} 1 + \dfrac{\sum_{j=2}^{17} PBd_{j-1,t-1}}{\sum_{j=2}^{17} PB_{j-1,t-1}}, & i = 2, 3, \ldots, 17 \\ 1 + \dfrac{PBd_{i-1,t-1}}{PB_{i-1,t-1}}, & i = 18, 19, \ldots, 60 \\ \dfrac{L_{i-1,t} + L_{i,t}}{L_{i,t} + L_{i+1,t}}, & i = 60, 61, \ldots \end{cases} \quad \text{(A.4.1)}$$

i age at end of year t

$AF_{i,t}$ inheritance gain factor, year t, for age group i

$PBd_{i,t}$ total pension balances of persons dying in year t in age group i

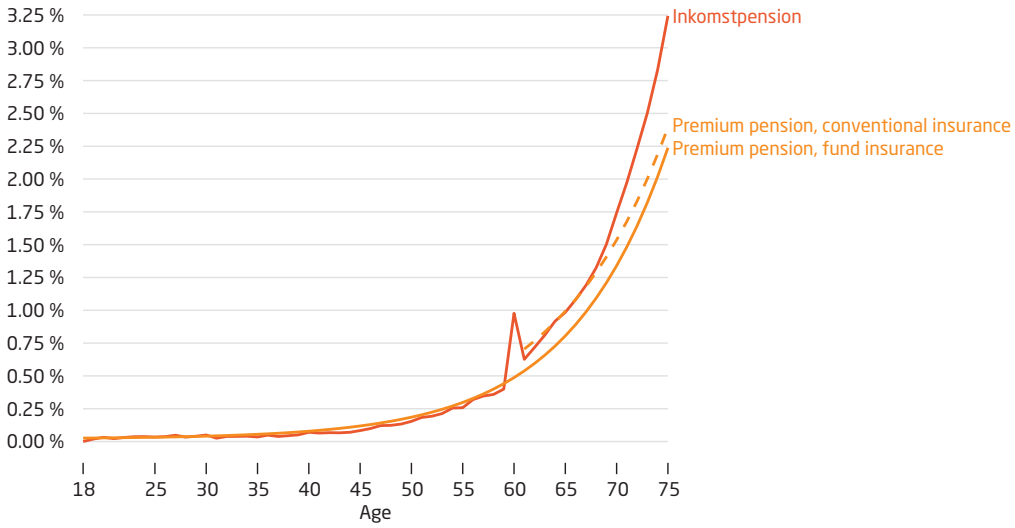
$PB_{i,t}$ total pension balances of survivors in year t in age group i

$L_{i,t}$ number of survivors in year t in age group i out of 100,000 born, according to the life span data of Statistics Sweden for the five-year period immediately preceding the year when the insured reaches age 60 for i = 60–64 and age 64 for i = 65 or older.

For persons 60 years of age or less, the inheritance gain factor is calculated as the sum of the pension balances of the deceased divided by the sum of the pension balances for the survivors in the same age group. For the group aged 2–17 years, a common inheritance gain factor is calculated. As there is some delay in information on persons dying during the year, the distribution of inheritance gains to persons aged 60 or less is made with a time lag of one year. For older persons, inheritance gain factors are calculated on the basis of the life-expectancy statistics from Statistics Sweden.

Inheritance gains arising after retirement are implicitly taken into account in the annuity divisor, through redistribution from individuals who die earlier to those who live longer. For the purpose of distributing inheritance gains by the same principle for both the economically active and retirees in the same birth cohort, the method of allocation is changed from age 60 on. The change of method is made in the year when the individual turns 60 in order to avoid delay in the allocation of inheritance gains for the year prior to retirement for persons who begin drawing their pensions at age 61. In the year when an insured turns 60, he or she is credited with double inheritance gains because of the two different procedures.

Figure A.3 Inheritance Gains



The inheritance gain factor for the inkomstpension for 60-year-olds is shown in the diagram as the two inheritance gain factors multiplied by each other. In the actual distribution of inheritance gains, however, the two different inheritance gains factors are applied to different bases.

The impact of inheritance gains on the pension liability is limited, for the pension balances of deceased persons are redistributed to the survivors. There is, however, an effect on the inkomstpension liability to the economically active because of the difference between inheritance gains arising and inheritance gains distributed; this effect is shown in Note 10. For the group dying before their 60th year, the difference is explained by tax assessment changes between the time when inheritance gain factors are calculated and the time when the gains are distributed, and by late information on persons dying. For the group dying in their 60th year or thereafter, the reasons are differences between estimated and actual mortality, and possible variations in mortality depending on the insured's level of income, i.e. the effect due to the shorter average life spans, for each gender, of persons with low incomes compared to persons with high incomes.

Inheritance Gain Factors for the Premium Pension

In the premium pension system, inheritance gains are calculated as a percentage of the premium pension capital of the survivors. The percentage corresponds to the one-year risk of death, i.e. the probability of dying within one year. For both the economically active and retirees, inheritance gains for the premium pension are currently distributed once a year. As with the inkomstpension, inheritance gains arising after retirement are included in the annuity divisor. If the insured elects a survivor benefit, the

inheritance gain will be much smaller, as it is then based on the probability that the longer-surviving party, whether the primary insured or the co-insured, will die within one year of the first party.

The risk of death in year t is calculated by Makeham's formula (see Annuity Divisors for the premium pension). The values of a, b and c in the formula are determined by the relationship between the capital of pension savers dying in year $t - 1$ and the capital of the surviving pension savers in the same year, calculated for each age group. The pension capital used to determine the inheritance gain in year t corresponds to the average balance of the premium pension account as of the last day of every month of year $t - 1$. The amounts of the inheritance gains are adjusted by a factor (close to 1) that will equalize with the greatest possible accuracy the total amount distributed in year t and the capital of pension savers dying in year $t - 1$.

The inheritance gains for the premium pension do not affect the pension liability over time, as death capital is offset by inheritance gains distributed.

Values in determination of inheritance gain for 2012, distributed during 2013

	a	b	c	factor
Fund insurance	0.0002	0.000008	0.1041	1.0274
Conventional insurance	0.0001	0.000016	0.0971	0.9745

Administrative Cost Factor, Inkomstpension

The costs of administering the inkomstpension system reduce the pension balances of the economically active. The deduction from pension balances is recalculated annually through multiplication of pension balances by an administrative-cost factor.

$$FF_t = 1 - \left(\frac{B_t \times A_t + J_{t-1}}{PB_{t-1}} \right) \qquad \text{(A.6.1)}$$

FF_t administrative cost factor (t)

B_t budgeted costs of administration, year t

A_t proportion charged to pension balances, year t

J_t adjustment amount, equals the difference between the amount that would have been deducted from pension balances in year t, based on actual cost in year t and the adjustment amount in year $t - 1$, as well as the actual deduction taken from pension balances in year t.

PB_t total pension balances, year t

The administrative-cost factor is calculated on the basis of a certain proportion, A, of budgeted costs for year t. Until the year 2021, the proportion charged to pension balances will be less than 100 percent (see Note 11). Moreover, there is an adjustment for the administrative costs of year $t - 1$. The adjustment amount is equal to the difference between the amount that would have been deducted from pension balances, based on actual cost and the adjustment amount for the previous year, and the actual deduction made from pension balances in the same year.

The administrative-cost factor affects the inkomstpension liability to the economically active via the deduction from pension balances (see Note 14, Table A). The difference between total costs of administration (see Note 4) and the deduction from pension balances puts a strain on the balance ratio.

Charge for Costs of Administration, Premium Pension

The costs of administration for the premium pension system are not to exceed 0.3 percent of the aggregate balances of the premium pension accounts of pension savers. The charge, which is deducted from premium pension accounts once a year, is intended to cover the total operating costs of the premium pension, including interest and other financial expenses.

Administrative costs affect the capital of the premium pension system; through the deduction from pension balances, they also affect the premium pension liability by the same amount (see Notes 17 and 20).

Annuity Divisors for the Inkomstpension

The annuity divisors for the inkomstpension are used for recalculation of pension balances as annual disbursements and are a measure of life expectancy at retirement, with consideration given to the interest of 1.6 percent (advance interest) credited to pensions in advance.

$$D_i = \frac{1}{12L_i}\sum_{k=i}^{r}\sum_{X=0}^{11}\left(L_k + (L_{k+1} - L_k)\frac{X}{12}\right)(1.016)^{-(k-i)}(1.016)^{\frac{-X}{12}}, \quad i = 61, 62, \ldots, r \qquad \text{(A.8.1)}$$

D_i annuity divisors, year t

$k - i$ number of years of retirement ($k = i$, $i + 1$, $i + 2$, etc.)

X number of months (0,1,…,11)

L_i number of survivors in age group i per 100,000 born, according to the life span statistics of Statistics Sweden. These statistics are for the five-year period immediately preceding the year when the insured reached age 60 in the case of pension withdrawal before age 65, and age 64 in the case of withdrawal thereafter

For persons who have begun drawing their old-age pensions before age 65, the amount disbursed is recalculated, because of the recalculated annuity divisors, at the outset of the year when the individual turns 65. The reason for the recalculation is the change in the underlying statistical data for the latest life expectancy statistics available in the individual's 65th year. With the continuing increase in life expectancy, the recalculated annuity divisors have so far been higher than before, resulting in reduction of future monthly pensions. The consequent marginal decrease in the inkomstpension liability to retirees is a component of the Change in Amounts Disbursed in Note 14, Table C.

After age 65, there is no further recalculation of annuity divisors. The increase in the pension liability of the system resulting from the fixed annuity divisors puts strain on the balance ratio when life expectancy is increasing.

Drawing an old-age pension involves a transfer of pension liability from the economically active to retirees. The actual recalculation of pension balances as annual disbursements results in a marginal change in the pension liability. The change arises because of the difference between annuity divisors and what we refer to as "economic annuity divisors" in this report. For a description of economic annuity divisors, see Appendix B, Pay-in Duration. The economic annuity divisors are used to calculate the pension liability to retirees.

Annuity divisors are determined for each age with no upper age limit.

Confirmed Annuity Divisors for the Inkomstpension *

	61	62	63	64	65	66	67	68	69	70
1938	17.87	17.29	16.71	16.13	15.56	14.99	14.42	13.84	13.27	12.71
1939	17.94	17.36	16.78	16.19	15.62	15.04	14.47	13.89	13.32	12.76
1940	18.02	17.44	16.86	16.27	15.69	15.11	14.54	13.96	13.39	12.82
1941	18.14	17.56	16.98	16.39	15.81	15.23	14.65	14.08	13.50	12.94
1942	18.23	17.65	17.06	16.48	15.89	15.31	14.74	14.16	13.59	13.02
1943	18.33	17.75	17.16	16.58	15.99	15.41	14.84	14.26	13.68	13.11
1944	18.44	17.86	17.28	16.70	16.11	15.54	14.96	14.38	13.80	13.23
1945	18.55	17.96	17.38	16.80	16.22	15.64	15.07	14.48	13.91	13.33
1946	18.64	18.05	17.47	16.89	16.31	15.73	15.16	14.57	13.99	13.41
1947	18.73	18.15	17.56	16.98	16.40	15.83	15.24	14.66	14.07	13.49
1948	18.83	18.24	17.66	17.07	16.49	15.91	15.33	14.74	14.16	13.58
1949	18.89	18.31	17.72	17.13	16.55	15.97	15.38	14.79	14.21	13.63

* Annuity divisors are confirmed each year up to age 80, but the table shows only the divisors up to age 70.

Annuity Divisors for the Premium Pension

To calculate the annual premium pension, the value of the premium pension account is divided by an annuity divisor for the premium pension. Unlike the inkomstpension, the annuity divisor for the premium pension is based on forecasts of life expectancy.

$$D_x = \int_0^{\infty} e^{-\delta t} \frac{l(x+t)}{l(x)} dt \qquad \text{(A.9.1)}$$

$$l(x) = e^{-\int_0^x \mu(t)dt} \qquad \text{(A.9.2)}$$

$$\mu(x) = a + be^{cx} \qquad \text{(A.9.3)}$$

D_x annuity devisors
x exact age at time of calculation

The annuity divisors are calculated in continuous time and according to exact age at retirement, but in principle they are consistent with the formula for the annuity divisor for the inkomstpension.[1] The survival function, $l(x)$, can be considered equivalent to the number L used in the calculation of the inkomstpension. The mortality function, $\mu(x)$, is the so-called Makeham's formula used for calculating the risk of death within one year. The values of a, b and c correspond to Statistics Sweden's forecast of remaining life expectancy in the years 2012–2060 for individuals born in 1938, 1945 or 1952.

So-called cohort mortality is used, which means that the year cohort 1938 is used for individuals born in the 1930s or earlier, year cohort 1945 is used for individuals born in the 1940s, and year cohort 1952 is used for individuals born in the 1950s or later. For x > 97 $\mu(x)$ merges with a straight line with a slope of 0.001.

[1]The formula applies in cases where one life is insured, i.e. where there is no survivor coverage.

Current Values for Disbursement Amounts in Fund Insurance

Cohort	a	b	c	δ
1930s	0.0068	0.00000054	0.1378	3.8221
1940s	0.0065	0.00000026	0.1454	3.8221
1950s	0.0058	0.00000014	0.1518	3.8221

When calculating the guaranteed amount in traditional insurance, the Statistics Sweden alternative with low mortality is used, reduced by a further 10 percent. However, the Statistics Sweden main alternative for mortality is used in calculating the amount of pension payable. This is because the assumed payment profiles are to be as realistic as possible and not unnecessarily cautious.

The interest credited, δ, is based as of April 1, 2007 on the rate of interest 4.0 percent before expense deduction in fund insurance, and 2.3 per cent in traditional insurance, when the amount payable is calculated. The interest rate in the calculation of the amount guaranteed in traditional insurance is 0.0 percent.

The interest credited, δ, is based as of March 1, 2014 on the rate of interest 3.0 percent before expense deduction in both fund insurance and traditional insurance when the amount payable is calculated. This equates to δ = 2,8559.

Since April 1, 2008, the actuarial provisions (FTA) are valued on the basis of the market rates of interest on liquid treasury bills and government bonds at the time of valuation. As of December 31, 2013, a new discounting curve is used based on the interpolation of swaps and a final part that converges to a given forward rate. A cost deduction of 0.1 percent is made from these interest rates.

For the premium pension in the form fund insurance, the pension liability is equal by definition to the value of all the assets, which in turn equals the aggregate value of all fund shares. For fund insurance, therefore, a change in annuity divisors has no effect on the pension liability. In the case of conventional insurance, the pension liability is equal to the actuarial provisions (FTA). It is calculated by multiplying every guaranteed amount by an annuity divisor. The annuity divisor is determined in the same way as pension amounts; see the formulas above. In the calculation of FTA, however, separate mortality assumptions are used for women and men. The FTA increase if a lower mortality rate or interest rate is assumed.

Annuity divisors are determined for each age with no upper age limit. Annual amounts are calculated using a rate of interest 3.0 percent.

Annuity Divisors for Annual Amount (Fund Insurance and Conventional Insurance)

	61	62	63	64	65	66	67	68	69	70
Without survivor benefit										
	17.19	16.80	16.40	15.99	15.18	14.76	14.33	13.89	13.45	12.99
With survivor benefit										
Co-insured 55	21.22	21.09	20.97	20.85	20.67	20.57	20.48	20.39	20.31	20.23
Co-insured 60	20.15	19.97	19.80	19.64	19.38	19.24	19.10	18.98	18.86	18.75
Co-insured 65	19.13	18.88	18.64	18.40	18.01	17.80	17.60	17.41	17.22	17.05
Co-insured 70	18.45	18.15	17.85	17.55	17.05	16.77	16.50	16.24	15.99	15.74

Annuity Divisors for Guaranteed Annual Amount (Conventional Insurance)

	61	62	63	64	65	66	67	68	69	70
Without survivor benefit										
	27.55	26.71	25.86	25.02	23.09	22.29	21.48	20.68	19.87	19.07
With survivor benefit										
Co-insured 55	36.35	36.04	35.75	35.48	35.04	34.83	34.64	34.46	34.29	34.14
Co-insured 60	33.48	33.04	32.63	32.25	31.63	31.34	31.06	30.81	30.58	30.37
Co-insured 65	31.01	30.40	29.83	29.28	28.32	27.87	27.44	27.04	26.67	26.33
Co-insured 70	29.65	28.94	28.25	27.58	26.33	25.75	25.20	24.67	24.17	23.70

Change in Value, Premium Pension

In the chapter Changes in Value of the Pension System, two different measures are used for calculating the change in value in the premium pension system. These measures are time-weighted return and capital-weighted return. They are briefly described below.

Capital-Weighted Rate of Return

The capital-weighted rate of return takes into consideration the capital flow of the account by weighing together the return and the capital in the account during the corresponding period. This means that during periods when the sum under capital management has been large, the return is given greater weight in the calculation than the return during periods when there has been little capital managed. The cash flows chiefly included in the calculations consist of paid-in pension credit and pension disbursements. The interest on the preliminary pension credit, the return on the funds in the portfolio, the administration fee to the Swedish Pensions Agency, the management fee to fund companies, the bonus on the management fee and inheritance gains are not included in the cash flows, but affect the return directly.

When the capital-weighted return is calculated, the so-called internal rate of return is sought. This rate is a discount rate at which the present value of all cash flows, including the value of the closing balance but with the opposite sign, will equal zero.

The capital-weighted return (also referred to as the Internal Rate of Return, or IRR) is calculated by solving the equation

$$\sum_{t=0}^{T} \frac{C_t}{(1+r)^{\frac{t}{365}}} = 0 \qquad \text{(A.10.1)}$$

r	internal rate of return during the period, expressed as an annual rate
t	number of days since the starting point
T	closing point
C_t	transaction (cash flow) at time t
C_T	final value, that is, the value of the account as of the day when the valuation is made

The equation requires that the final value be negative so that a value of SEK X results in a transaction of SEK $-X$. C_T is thus always ≤ 0.

To calculate the internal rate of return, it is therefore necessary to know the closing value of the portfolio (market value), all cash flows to and from the portfolio, and the time when these cash flows take place. The internal rate of return can be said to yield the "interest rate on bank accounts" which, given the deposits and withdrawals, have resulted in the current closing value.

The formula above for the internal rate of return is the one normally used in financial matters. It can also be expressed in the following way, which is consistent with how interest is actually credited to bank accounts:

$$\sum_{t=0}^{T-1} C_t \times (1+r)^{\frac{T-t}{365}} = C_T \qquad \text{(A.10.2)}$$

Interest is earned on each deposit C_t from the time of deposit t until the closing date T. C_t is greater than or equal to zero, and is the balance at the time of calculation.

Time-Weighted Rate of Return

With the time-weighted return, adjustment is made for the effects of capital inflows and outflows, that is, to prevent new pension credit recorded or pensions paid from affecting the calculated rate of return. The time-weighted return thus measures the return for a certain deposited amount for a certain period of time. If time-weighted, the return is measured for a period, the returns for the partial periods are weighed together with equal weights. A partial period consists of the time between two cash flows. The equation below describes the time-weighted return.

$$R_t = \left(\prod_{t=0}^{T} \frac{MV_{t+1}}{MV_t + C_t} \right) - 1 \qquad \text{(A.10.3)}$$

R_t	return during the period
t	number of days since the starting point
T	closing point
MV_t	market value at time t
C_t	transaction (cash flow) at time t

The time-weighted return can be used to obtain accurate comparisons of the return between funds, where fund managers cannot set aside more capital under favourable return conditions or vice versa. The measure can also be used for comparisons with relevant market indices or with the return achieved by other managers. In the premium pension system, the pension saver cannot freely determine the in- or outflow of capital for the premium pension account. On the other hand, the saver decides whether and when the moneys invested are to be transferred to another fund. The fund companies have no influence over the flow of capital in the fund.

Measures of the development of value for the system

How well are the funds doing?
- Tidsviktad avkastning (premiepensionsindex)

How well are the pension savers doing?
- Kapitalviktad avkastning

Measures of the development of value for fund savers

How well are *my* funds doing?
- Tidsviktad avkastning per fond
- Tidsviktad avkastning för fondportföljen

How well is *my* account/*my* pension doing?
- Kapitalviktad avkastning

Appendix B Mathematical Description of the Balance Ratio

Excerpt from Regulation (2002:780) on the Calculation of the Balance Ratio[1]

In accordance with Ch. 58 § 14 of the Social Insurance Code (SFB, 2010:110), on the Earnings Related Old Age Pension, a balance index is to be calculated annually. The regulations (2002:780) require the Swedish Pensions Agency to prepare a calculation of the balance index, to be confirmed subsequently by the Government. The balance ratio is to be calculated as follows:

Balance Ratio, *BT*

$$BT_{t+2} = \frac{AT_t + \overline{BF}_t}{S_t} \tag{B.1.1}$$

$$AT_t = \overline{A}_t \times \overline{OT}_t \tag{B.1.2}$$

$$\overline{BF}_t = \frac{BF_t + BF_{t-1} + BF_{t-2}}{3} \tag{B.1.3}$$

$$\overline{A}_t = \frac{A_t + A_{t-1} + A_{t-2}}{3} \times \left(\frac{A_t}{A_{t-3}} \times \frac{KPI_{t-3}}{KPI_t}\right)^{\frac{1}{3}} \times \left(\frac{KPI_t}{KPI_{t-1}}\right) \tag{B.1.4}$$

$$\overline{OT}_t = median[OT_{t-1}, OT_{t-2}, OT_{t-3}] \tag{B.1.5}$$

t	calendar year if the variable refers to flows, end of calendar year if the variable refers to stocks
AT_t	contribution asset, year t
BF_t	buffer fund, the aggregate market value of the assets of the First–Fourth and Sixth National Pension Funds in year t. By market value is meant the value which according to Ch. 6 § 3 of the National Pension Funds Act (2000:192) and Ch. 4 § 2 Sixth National Pension Fund Act (2000:193), is to be shown in the annual reports of these funds.
$\overline{BF}_t$	smoothed value of buffer fund, year t
S_t	pension liability, year t
$\overline{A}_t$	smoothed contribution revenue of the pay-as-you-go system, year t
$\overline{OT}_t$	smoothed turnover duration, year t
A_t	contribution revenue of the pay-as-you-go system, year t
OT_t	turnover duration, year t
KPI_t	consumer-price index for June, year t

[1] Some editing has been done to simplify the presentation.

Average Retirement Age, $\overline{R}$

$$\overline{R}_t = \frac{\sum_{i=61}^{R_t^*} U_{i,t}^* \times D_{i,t} \times i}{\sum_{i=61}^{R_t^*} U_{i,t}^* \times D_{i,t}}, \quad \overline{R} \text{ rounded off to nearest whole number} \tag{B.2.1}$$

i age at year-end
R_t^* oldest age group granted a new pension, year t
$U_{i,t}^*$ total monthly pensions granted to persons in age group i, year t
$D_{i,t}$ annuity divisor, year t, age group i

Turnover Duration, OT

$$OT_t = IT_t + UT_t \tag{B.3.1}$$

Pay-in Duration, IT

$$IT_t = \frac{\sum_{i=16}^{\overline{R}_t-1} \overline{PR}_{i,t} \times L_{i,t} \times (\overline{R}_t - i - 0.5)}{\sum_{i=16}^{\overline{R}_t-1} \overline{PR}_{i,t} \times L_{i,t}} \tag{B.4.1}$$

$$\overline{PR}_{i,t} = \frac{\frac{PR_{i,t}}{N_{i,t}} + \frac{PR_{i+1,t}}{N_{i+1,t}}}{2}, \quad i = 16, 17, \ldots, \overline{R}_t - 2 \tag{B.4.2}$$

$$\overline{PR}_{\overline{R}_t-1,t} = \frac{PR_{\overline{R}_t-1,t}}{N_{\overline{R}_t-1,t}} \tag{B.4.3}$$

$$L_{i,t} = L_{i-1,t} \times h_{i,t}, \quad i = 17, 18, \ldots, \overline{R}_t - 1 \text{ where } L_{16,t} = 1 \tag{B.4.4}$$

$$h_{i,t} = \frac{N_{i,t}}{N_{i-1,t-1}}, \quad i = 17, 18, \ldots, \overline{R}_t - 1 \tag{B.4.5}$$

$PR_{i,t}$ the sum of 16 percent of pension qualifying-income calculated according to Ch. 59 of the Social Insurance Code and 16 percent of the pension-qualifying amounts calculated according to Ch. 60 of said code, pay-in year t, age group i, for individuals who have not been registered as deceased in year t
$N_{i,t}$ number of individuals in age group i who at any time through pay-in year t have been credited with pension-qualifying income or pension-qualifying amounts and have not been registered as deceased
$L_{i,t}$ proportion of persons in age group i, year t
$h_{i,t}$ change in proportion of persons in age group i, year t

Pay-out Duration, *UT*

$$UT_t = \frac{\sum_{i=\bar{R}_t}^{R_t} 1.016^{-(i-\bar{R}_t+0.5)} \times L^*_{i,t} \times (i - \bar{R}_t + 0.5)}{\sum_{i=\bar{R}_t}^{R_t} 1.016^{-(i-\bar{R}_t+0.5)} \times L^*_{i,t}} \tag{B.5.1}$$

$$L^*_{i,t} = L^*_{i-1,t} \times he_{i,t} \quad \text{where } L^*_{60,t} = 1 \tag{B.5.2}$$

$$he_{i,t} = \frac{U_{i,t}}{U_{i,t} + Ud_{i,t} + 2 \times Ud^*_{i,t}}, \quad i = 61, 62, ..., R_t \tag{B.5.3}$$

R_t oldest age group receiving a pension, year t
$U_{i,t}$ total pension disbursements in December of year t to age group i
$Ud_{i,t}$ total of last monthly pension disbursements to persons in age group i who received pensions in December of year $t - 1$ but not in December of year t
$Ud^*_{i,t}$ total of last monthly pension disbursements to persons in age group i who were granted pensions in year t and did not receive a pension payment in December of year t
$L^*_{i,t}$ proportion of remaining disbursements to age group i, year t
$he_{i,t}$ change in pension disbursements due to deaths, year t, age group i

Pension Liability, *S*

$$S_t = SA_t + SP_t \tag{B.6.1}$$

$$SA_t = PB_t + IPR_t + TP_t \tag{B.6.2}$$

$$SP_t = \sum_{i=61}^{R_t} U_{i,t} \times 12 \times \left(\frac{De_{i,t} + De_{i,t-1} + De_{i,t-2}}{3} \right) \tag{B.6.3}$$

$$De_{i,t} = \frac{\sum_{j=i}^{R_t} \frac{1}{2} \times (L^*_{j,t} + L^*_{j+1,t}) \times 1.016^{i-j-1}}{L^*_{i,t}}, \quad i = 61, 62, ..., R_t \text{ where } L^*_{R_t+1} = 0 \tag{B.6.4}$$

SA_t pension liability in year t in regard to pension commitment for which disbursement has not commenced (pension liability to the economically active)
SP_t pension liability in year t in regard to pensions being disbursed to retired persons in the pay-as-you-go system
PB_t total pension balances, year t, according to Ch. 62 §§ 2, 5 and 7, Social Insurance Code
IPR_t estimated pension credit earned for inkomstpension, year t, according to Ch. 61 §§ 5–10 of said code
TP_t estimated value of ATP, year t, for persons who have not begun to draw this pension
$De_{i,t}$ economic annuity divisor for age group i, year t

Appendix C List of Terms

actuarial provisions (försäkringstekniska avsättningar)

provisions set aside to guarantee the commitment of the insurer in conventional insurance. The corresponding assets must therefore be invested conservatively to make certain that the insured will receive their benefits during retirement.

adjustment indexation (följsamhetsindexering)

annual recalculation of inkomstpension and supplementary pension based on the change in the income index. The change in the index is reduced by the interest of 1.6 percent credited in the annuity divisor. Note that there is no adjustment index, only adjustment indexation. If the income index for year t is designated by I_t the adjustment indexation is calculated as follows:

$$\text{Adjustment indexation (at the turn of the year } (t-1) \rightarrow t) = \frac{I_t/I_{t-1}}{1.016}$$

During a balancing period, the income index is replaced by balance index.

administrative costs* (administrationsavgift)

fee to cover costs of administration and operations, (see Appendix A).

annuity divisor* (delningstal)

a number used to calculate pension amounts in premium-based pension insurance and national public pension. The annuity divisor reflects remaining life expectancy at retirement, taking into account the imputed interest credited to the pension (see Appendix A). Economic annuity divisors are used for calculating the pension liability (see Appendix B).

ATP (tilläggspension)

part of the national public pension calculated according to the ATP system. Supplementary pension refers to the former ATP plus folkpension and is paid to all persons born before 1938. Persons born between 1938 and 1953 receive a certain number of twentieths of their income-related pension as ATP and the remaining number of twentieths as inkomstpension and premium pension. The respective number of twentieths depends on the year of birth. The ATP system was a defined-benefit pension system. The ATP portion of the ATP plus folkpension is equal to 60 percent of the average pension points for the 15 years with the most pension points; the folkpension portion is equal to 96 percent of one price-related base amount for single pensioners and 78.5 percent for married pensioners. To receive a full pension, an individual must have at least 30 years of pension-qualifying income.

balance index* (balansindex)

ratio that replaces the income index during a balancing period. When balancing is activated, pension balances and pensions are indexed by the change in a balance index instead of the income index. Changes in the balance index are dependent on the change in the income index and on the size of the balance ratio.

*For amounts and values, see Statistik och publikationer at www.pensionsmyndigheten.se.

balance ratio (balanstal)
a number that expresses the relationship between assets and pension liability in the inkomstpension and supplementary pension system (see Appendix B).

balancing (balansering)
a method for restoring financial balance in the inkomstpension and supplementary pension systems of the national pension. Balancing is activated if the balance ratio drops below 1.0000, that is, if the pension liability exceeds the assets of the system, and ends when the balance index reaches the same level as the income index. When balancing is activated, pension balances and pensions are indexed by the change in a balance index instead of the income index (see Appendix A).

buffer fund (buffertfond)
absorbs interperiod discrepancies between pension contributions and pension expenditure in a pay-as-you-go system. The primary purpose of the buffer fund is to stabilize pension disbursements and/or pension contributions in relation to economic and demographic variations. The buffer fund of the national public pension system consists of five different funds: the First-Fourth and Sixth National Pension Funds.

capital-weighted return (kapitalviktad avkastning)
another term for the capital-weighted return is internal rate of return. In the premium pension system, the measure is used in evaluating individual accounts, but also for the system as a whole. Consideration is given to the point in time and amount of all paid-in pension credit and pensions disbursed as well as pension account balances at the end of the period. The capital-weighted return corresponds to the average annual return during the period and may be compared, for example, with the interest on a bank account. The Pensions Agency's calculation of the capital-weighted return for the premium pension includes in the return not only the change in value of the funds concerned, but also inheritance gains, bonuses and management fees. For more detailed information, see Appendix A.

ceiling on contributions (avgiftstak)
the highest income on which the national pension contribution and the central-government pension contribution can be based, equivalent to 8.07 income base amounts.

ceiling on pension-qualifying income* (intjänandetak)
the highest income, after deduction of the individual pension contribution, for which pension credit is earned. It corresponds to 7.5 income base amounts.

central government old-age pension contribution (statlig ålderspensionsavgift)
a pension contribution paid by the central government. The contribution is 10.21 percent of pension-qualifying social-insurance benefits, except for sickness and activity compensation (disability pension). For sickness and activity compensation and so-called pension qualifying amounts, the contribution is 18.5 percent.

compounding (förräntning)
in this report, synonymous with indexation.

contribution asset (avgiftstillgång)
the value of the flow of contributions to the inkomstpension. Calculated by multiplying smoothed contribution revenue by turnover duration.

*For amounts and values, see Statistik och publikationer at www.pensionsmyndigheten.se.

contribution base (avgiftsunderlag)
the incomes and amounts on which a pension contribution is to be paid. Consists primarily of earnings, but also of social insurance benefits, such as sickness cash benefits and unemployment cash benefits, as well as pension-qualifying amounts.

contribution revenue (avgiftsinkomst)
the total pension contributions paid to the pay-as-you-go system in one year. In the calculation of the contribution asset, smoothed contribution revenue is used.

conventional insurance (traditionell försäkring)
pension insurance where the insurance company decides how the insurance capital is to be invested and provides some form of guaranteed payments together with the chance to receive a share of any surplus.

defined-benefit pension system (förmånsbestämt pensionssystem)
a pension system where pensions are set in advance to a fixed amount or a certain percentage of, for example, final salary or average earnings during a specified number of years. In a defined-benefit pension system the financial risk – due to variations over time in return on the system's assets and in mortality rates – is borne by the insurer. In a public pension system, the insurer is the taxpayers, which means that contributions/taxes to the system may vary.

defined-contribution pension system (avgiftsbestämt pensionssystem)
a pension system in which pension credit in monetary terms accrues by the same amount as the pension contribution paid by or for the individual. In a defined-contribution pension system, the insured bears the financial risk deriving from the variability over time in the mortality rate and in the rate of return on the assets of the system. This means that the value of a pension may vary.

fund (fond)
a legal entity operated by a fund management company. The fund management company invests in securities in which investors in turn can buy shares.

fund asset (fondtillgång)
the value of the assets at the end of the confirmation year.

fund insurance (fondförsäkring)
pension insurance where capital is invested in funds that may be selected via an insurance company. Through their choice of funds, the insured decide how to invest their saving and bear the risk associated with the development of their pension balances.

fund strength (fondstyrka)
the monetary amount of the buffer fund at the end of a given year divided by the pension disbursements for the same year. It is a measure of the size of the buffer fund in relation to the flow of pension payments.

funded system (fonderat system)
a pension system in which contributions or premiums paid in are placed in funds and saved separately for each individual and collective. The premium pension system is an example of a funded system.

guarantee rule/guaranteed supplement (garantiregel/garantitillägg)
an amount by which supplementary pension is raised for those born 1938–1953 to ensure they will not receive lower pensions than what they earned up to and including 1994.

guaranteed pension (garantipension)
portion of the national public pension paid to those with little or no inkomstpension and/or supplementary pension.

income index* (inkomstindex)
the change in the income index shows the development of the average income. The measure of income used here is pension-qualifying income, without limitation by the ceiling, but after deduction of the individual pension contribution, (see Appendix A).

income-based old-age pension (inkomstgrundad ålderspension)
the inkomstpension and ATP plus the premium pension, sometimes referred to as the earnings-related old-age pension.

income base amount* (inkomstbasbelopp)
base amount which is recalculated each year according to the change in the income index. The income base amount is used primarily to calculate the ceilings on contributions and pension-qualifying income.

indexation* (indexering)
recalculation of pension balances by the change in the income index, or balance index, and the recalculation of pensions by adjustment indexation.

individual pension contribution (allmän pensionsavgift)
pension contribution paid by each person individually via income tax. It corresponds to 7 percent of income up to the ceiling for contributions.

inheritance gain* (arvsvinst)
pension balances or insurance capital of deceased insured persons credited to other similar insurances. In the national public pension, this refers to inkomstpension assets and premium pension capital inherited by the surviving insured (see Appendix A).

inkomstpension (inkomstpension)
the portion of the national public pension where the contribution, 16 percent of the pension base, is paid to a pay-as-you-go system.

internal rate of return (internränta)
see capital-weighted return.

National Pension Funds (AP-fonderna)
legally and administratively, the buffer fund of Sweden's pay-as-you-go pension system consists of five different funds: the First, Second, Third, Fourth and Sixth National Pension Funds. Pension contributions are apportioned equally to the First-Fourth National Pension Funds, which also contribute equally to the payment of pensions. The Sixth National Pension Fund receives no pension contributions and pays no pensions. From the standpoint of the pay-as-you-go system, the five buffer funds may be viewed in some respects as a single fund.

national public pension (allmän pension)
pension provided for by law. The national public pension is governed by the Social Insurance Code and consists primarily of the inkomstpension, the supplementary pension (ATP), the premium pension and the guaranteed pension.

*For amounts and values, see Statistik och publikationer at www.pensionsmyndigheten.se.

old-age pension contribution (ålderspensionsavgift)
paid by employers as an employer contribution and by self-employed persons as an individual pension contribution. The contribution rate for the old-age pension is 10.21 percent. It is paid on the individual's entire income, but the contribution levied on the portion of income above the ceiling is not credited to the pension system, but to the central government.

pay-as-you-go pension systems (fördelningssystem)
pension system in which pension contributions or premiums paid in during a given year are used to finance disbursements the same year. In a PAYG system with a buffer fund, any surpluses are used to finance deficits in other years.

pay-in duration (intjänandetid)
the difference in number of years between the expected average age of earning pension credit and the expected average age of retirement

pay-out duration (utbetalningstid)
the difference in number of years between the expected average age of retirement and the expected average age of pension recipients.

pension balance (pensionsbehållning)
the value of earned pension credit within the national public pension at any given time. The pension balance for inkomstpension, after deduction of administration costs, is the sum of pension credit each year, adjusted to reflect inheritance gains distributed and recalculated by changes in the income index or the balance index.

pension base (pensionsunderlag)
the total of an individual's pension-qualifying income and pension-qualifying amounts, but no higher than 7.5 income base amounts per year.

pension contribution (pensionsavgift)
contribution to the national public pension. See individual pension contribution, old-age pension contribution and central-government old-age pension contribution.

pension credit (pensionsrätt)
amount set aside each year for inkomstpension and premium pension. An individual's pension credit is 18.5 percent of her/his total pension base and equal to her/his total contribution to the pension system. Individuals born in 1954 or thereafter are credited with 16 percent of their pension base for the inkomstpension and with 2.5 percent of their pension base for the premium pension.

pension level (pensionsnivå)
in this report, the average pension in relation to the average pension-qualifying income for persons aged 16–64.

pension liability (pensionsskuld)
in this report, the financial commitment of the pension system at the end of each year. For the inkomstpension, the pension liability to the economically active is calculated as the sum of the pension balances of all individuals. The pension liability to retirees is calculated by multiplying the annual pension amount of each birth cohort by the economic annuity divisor for that cohort. Through 2017 the pension liability will also be calculated for the ATP credit earned by the economically active. With fund insurance, the pension liability for the premium pension is calculated as

the total value of all fund shares; with conventional insurance, the pension liability is calculated as each guaranteed amount multiplied by an annuity divisor.

pension points (pensionspoäng)

points in the national public pension for persons born 1938–1953 which are calculated annually on the basis of pension-qualifying income and are used to calculate supplementary pension. Pension points are calculated as follows:

$$\textit{Pension points} = \frac{PGI - HPBB}{HPBB}$$

PGI pension-qualifying income
HPBB the higher price-related base amount

pension-qualifying amounts (pensionsgrundande belopp)

basis for pension credit in the national public pension for a fictive income for: years with small children, studies, national service, sickness or activity compensation.

pension-qualifying income (pensionsgrundande inkomst)

income used as a basis for calculating pension credit in the national public pension. In principle, pension-qualifying income consists of annual income (earnings, sickness cash benefits, parental cash benefits, unemployment cash benefits, etc.) reduced by the individual pension contribution. Beginning in 2003, annual income must exceed 42.3 percent of one price-related base amount to qualify for pension credit.

premium pension (premiepension)

part of the national public pension in which the contribution, consisting of 2.5 percent of the pension base, is invested in funds.

price-related base amount* (prisbasbelopp)

an amount used in the national pension system for purposes including calculation of the guaranteed pension. The price-related base amount is recalculated each year according to the change in the Consumer Price Index (for June). In addition there is a higher price-related base amount, which is used to calculate pension points and also follows changes in the Consumer Price Index.

return (avkastning)

income that results from an investment. For shares of stock, the return may consist of a dividend and the change in the market price. In this report, the concept refers to the direct return plus the change in value of the buffer fund and the premium-pension funds.

time-weighted return (tidsviktad avkastning)

the time-weighted return is used to describe the change in value of a fund or index. The measure shows the return on a deposit made at the outset of the period, without consideration of whether additional deposits or withdrawals have been made during the period. For more detailed information, see Appendix A.

turnover duration (omsättningstid)

reflects the expected time from the earning of pension credit until the disbursement of the inkomstpension. Turnover duration is the sum of pay-in duration and pay-out duration. Turnover duration is used for valuation of the contribution inflow. Turnover duration depends on the rules governing the earning of pension credit and the disbursement of pensions and on the patterns of labour force participation and mortality in each age group.

*For amounts and values, see Statistik och publikationer at www.pensionsmyndigheten.se.

www.pensionsmyndigheten.se