ORANGE REPORT

Pensions from three sources

Three fourths of all pensions paid in Sweden come from the national pension system, one fifth consists of occupational pensions, and provided by private pension insu

A quarter your income

Each year we pay 28 percent

SEK 7,511,692,000,000

That's how much we owe today's and tomorrow's pensioners. It is roughly 2.5 times the value of eve rything produced in Sweden in one year.

Low ceiling pensionable i

For men, 21 percent have incomes SEK 34,230 per month in the na women, 8 percent have incomes above

Pensions to be lowered further in 2011

The balance ratio for 2011 is 0.9549 and will lower the indexation of the inkomstpension at the end of 2010 by 4.5 percent.

SEK 611 per year

Managing the pension system cos each pension saver and pensioner SEK 611 – a total of SEK 4.3 billion er year.

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Deficit in the pension system

The deficit of the pension system was SEK 323 billion as of December 31, 2009. Without balancing the deficit would have been SEK 410 billion.

SEK 745,133

That is the balance of the aver- age pension saver's pension ac count

We live longer each year. That's nice, but we pay a price.

Compared to 2008, the average expected pension payout duration for a 65-year-old (economic life expectancy) is 40 days longer, increasing the pension liability by SEK 23 billion.

PENSIONS MYNDIGHETEN

Contents

Pensions in Focus

As we write in 2010, people are talking more about pensions than ever. Those seeking explanations will find at least some. For 2010, the first year ever, pensions have been lowered in nominal terms. This was linked in turn to the lacklustre economy in recent years, falling prices, and activation of balancing. Despite tax cuts, the reduction was felt by many pensioners, making pensions a big issue in discussions.

There is also evidence of the economic tendency in the Orange Envelopes of the economically active. The aggregate value of all our inkomstpensions fell by SEK 58 billion in 2009, a decrease of 1.4 percent. However, this was offset by an increase of SEK 81 billion, or 35 percent, in the total value of all premium pensions thanks to the upswing on stock markets that same year.

Demographics are another indication that discussions on pensions will become more heated. The large cohorts born in the 1940's – about 120,000 people each year – are now retiring. A populist comment might be that since the same generation started the debates on young people in the 1960's and on day care in the 1970's, pensioners and their situation are likely to remain in focus for years to come.

At the same time, happily, we are living longer – life expectancy is rising – and the pensions we earn will need to suffice for an increasing number of years after retirement. More and more of us will have to get used to the idea of continuing to work past our 65th birthday if we want to receive the same percentage of our final earnings as a pension that our parents did.

Another effect of the focus on pensions is that more and more of those in the labour market are beginning to wonder how much their pensions will turn out to be. Many find, quite rightly, that it is difficult to calculate what monthly pension they can expect after retiring. This uncertainty creates an opening for a large market for saving products and investment advisory services.

In this interesting environment, the new Swedish Pensions Agency (Pensionsmyndigheten) has been established. Our objective is to simplify pensions. Not least, we want to make it easier for many more people to calculate their total pension, and to enable pension savers to make sound financial decisions in various phases of their lives. The Orange Envelope does not present the full picture; it only shows the national public pension. Almost everyone also has an occupational pension from work, and today many can obtain a pension projection that includes their occupational pension. This information is available on the Internet at www.minpension.se, which is maintained jointly by the central government and the insurance industry. The same projection is available on the website of the Swedish Pensions Agency.

At the Swedish Pensions Agency we want to contribute to the debate on pensions. One way is to present facts on the pension system, what it costs, and how it works. We do this in the Orange Report that you now hold in your hand. In the introduction we have highlighted some interesting facts found in the report. Reading pages 8–13, which describe how the national pension works, can be time well spent for those seeking to familiarize themselves quickly with the pension system.

Pensions are not as difficult a subject as one might believe. But we still think that they should be made easier to grasp, simply because we all have better things to do than worry about our pensions.

Katrin Westling Palm
Director General

Did you know this about pensions?

The Orange Report is an "encyclopedia" of facts for anyone interested in the Swedish Pension System.

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The balance ratio for 2011 is 0.9549 and will lower the indexation of the inkomstpension at the end of 2010 by 4.5 percent.

Deficit in the pension system

The deficit of the pension system was SEK 323 billion as of December 31, 2009. Without balancing the deficit would have been SEK 410 billion.

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Compared to 2008, the average expected pension payout duration for a 65-year-old (economic life expectancy) is 40 days longer, increasing the pension liability by SEK 23 billion.

SEK 7,511,692,000,000

That's how much we owe today's and tomorrow's pensioners. It is roughly 2.5 times the value of everything produced in Sweden in one year.

More minus than plus

In 2009 the inflow of pension contributions to the inkomstpension system was SEK 203 billion. The expenditure of the inkomstpension system thus exceeded its contribution revenue for the first time since 1999. According to forecasts, this deficit will continue until 2049.

Pensions from three sources

Three fourths of all pensions paid in Sweden come from the national pension system, one fifth consists of occupational pensions, and the rest is provided by private pension insurance.

Low ceiling on pensionable income

For men, 21 percent have incomes above the income ceiling of SEK 34,230 per month in the national pension system. For women, 8 percent have incomes above the ceiling.

A quarter of your income

Each year we pay 28 percent of our incomes in contributions toward our future pensions.   *See back page*

Average individual's pension account: SEK 745,133

That is the balance of the average pension saver's pension account.   *See page 36*

Premium pension funds up 35 percent

The average return for a premium pension saver with fund insurance was 34.7 percent in 2009.

See "Changes in the Value of the Pension System"

National Pension Funds: + 19 percent

The National Pension Funds earned an average return of 19.3 percent in 2009.

See "Changes in the Value of the Pension System"

SEK 611 per year

Managing the pension system cost each pension saver and pensioner SEK 611 – a total of SEK 4.3 billion per year.

See "Costs of Administration and Capital Management"

Q: When should I retire?

A: If you were born in 1960, you should wait until the age of 67 years and 1 month if you want a pension as high as your parents'. By comparison, if you turn 65 in 2010, you will need to postpone retirement until you reach 66 years and 3 months in order to receive an equally large national pension.   *See page 30*

18 years and 3 months

That's how long your pension is expected to be paid if you were born in 1945 and begin drawing a pension this year.

See page 30

How the National Pension System Works
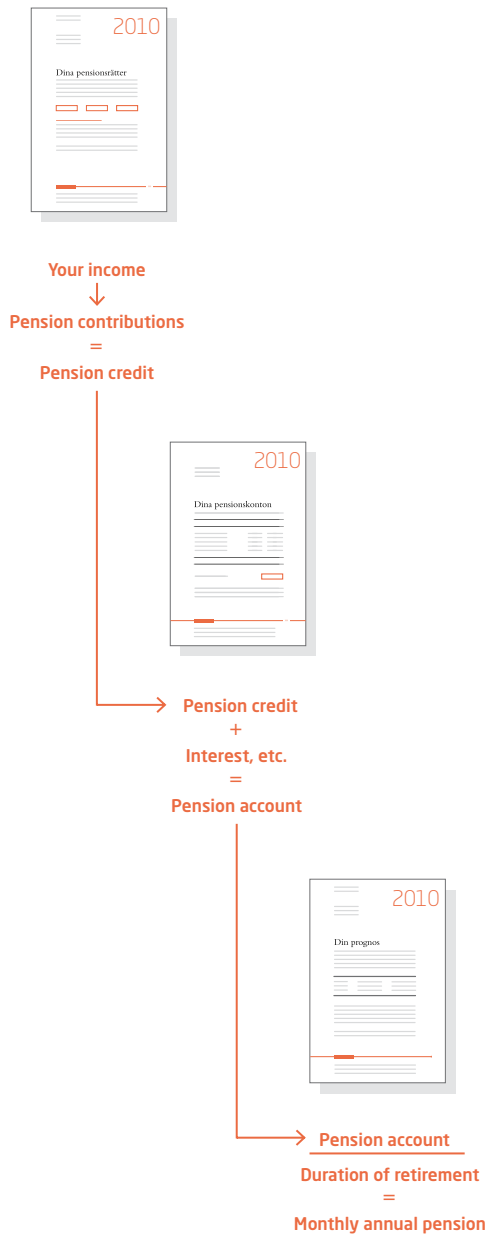
The national public pension is based on straightforward principles. The outline shown in the margin should enable the reader to grasp its essential features. For anyone wishing to understand the system more thoroughly, it should suffice to read this section.

Your income
↓
Pension contributions
=
Pension credit

Pension credit
+
Interest, etc.
=
Pension account

Pension account
Duration of retirement
=
Monthly annual pension

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

One feature of pension insurance is that 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.

Pension insurance is intended 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

Proportion* Granted a National Pension at Ages 61–70, Percent

Birth cohort	Age at first withdrawal									
	61	62	63	64	65	66	67	68	69	70
1938	3.7	2.3	2.3	2.1	77.4	4.1	3.2	0.8	0.3	0.3
1939	3.9	1.9	2.1	2.3	75.6	6.5	2.3	0.8	0.3	0.3
1940	3.0	2.1	2.5	3.1	76.0	5.0	2.6	0.8	0.4	
1941	2.9	2.2	3.0	3.7	73.3	6.3	2.8	0.8		
1942	3.4	2.9	3.4	3.9	71.1	6.2	3.4			
1943	4.0	3.1	3.6	5.4	67.0	7.2				
1944	4.8	3.4	4.8	6.1	64.4					
1945	5.2	4.3	5.3	6.2						
1946	6.1	4.8	5.5							
1947	6.3	4.6								
1948	6.0									

*　The proportions are for new retirees in relation to the potential number of retirees as of December 2009. Ages are as of December 31 of the year when the pensioner began drawing an inkomstpension / guaranteed pension.

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, years with small children (child-care years), studies and compulsory national service. The maximum pension base is 7.5 income-related base amounts (SEK 381,750 in 2009). 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 2009 was SEK 70,624.

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.

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,

[1] Pension credit for the premium pension may be transferred between spouses. Pension capital transferred is currently reduced by 8 percent. The reasons are the assumption that more such transfers will be made to women than to men, and the fact that women on average live longer than men, with the result that pensions based on transferred credit are likely to be disbursed for a longer period.

[2] For 2009, 8.07 x 50,900 = SEK 410,763

[3] For 2009, 0.423 x 42,800 = SEK 18,104.

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

[5] This tax amounted to SEK 15.2 million in 2009; see Note 1, Table A.

[6] $0.1721/0.93 \approx 0.185$

[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.

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 Premium Savings Fund. Beginning May 2010, the Premium Savings Fund will be replaced by the AP7 Såfa, the government pension management alternative based on birth cohorts, which has a life-cycle profile. At the end of 2009, there were 777 funds in the premium pension system, administered by 88 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, 2009

	Number of registered funds, 2009	Managed capital, December 31, billions of SEK				
		2009	2008	2007	2006	2005
Equity funds	576	179	105	163	141	99
Mixed funds	53	12	10	10	9	7
Generation funds	36	38	29	35	31	23
Interest funds	111	21	24	13	7	5
Premium Savings Fund (an equity fund)	1	90	63	87	79	58
Total	777	340	231	308	267	192

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. Since 1995, the average rate of return in the inkomstpension system, measured as the capital-weighted rate of return, has been 2.8 percent. Since the first payments into the premium pension system in 1995, the average return of the premium pension system, after deduction of fund-management fees, has been 3.2 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 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. 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.[8] 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.

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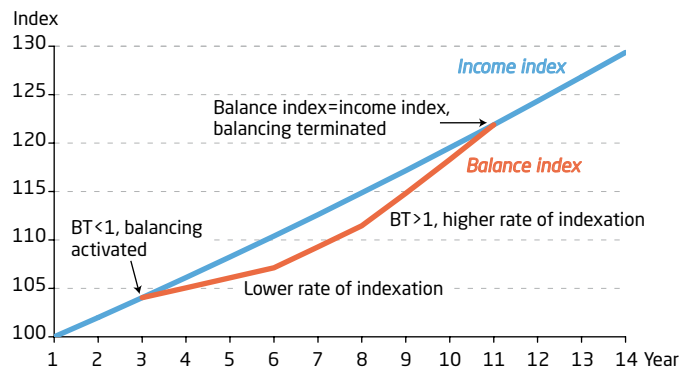
[8] The balance index for the next year is calculated by multiplying the balance index (102.96) by the ratio between the new and the old income index, multiplied in turn by the new balance ratio.

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 withdraw a pension. At the current level of costs, the deduction for costs will reduce the inkomstpension by approximately 0.5 percent compared to what it would have been without the deduction.

Similarly, the costs of administration and fund management in the premium pension system are deducted each year 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 level is 0.50 percent of premium pension capital per year. However, costs of administration are expected to decrease and to average 0.25 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 7.5 percent from what it would have been without any cost deduction.

How is the Inkomstpension Calculated?

The inkomstpension is calculated through dividing the pension balance by an annuity divisor (see Appendix A) at the time of retirement. Divisors are specific for each birth cohort and reflect the remaining life expectancy when a pension is first withdrawn as well as an interest rate of 1.6 percent. The 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 2.5 million, he/she will receive an inkomstpension of SEK 156,250 per year (2.5 /16), or SEK 13,020 per month

The inkomstpension is recalculated annually by the change in the income index less the interest of 1.6 percentage points credited in the annuity divisor,[9]

[9] It is somewhat misleading to state "minus"; the inkomstpension is recalculated by the ratio between the new and the old income index. divided in turn by 1.016.

so-called adjustment indexation. This means that if income 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. Thus, pensions are the same in constant prices only if incomes increase by exactly 1.6 percent more than inflation. If, for example, incomes increase by 2 percent more than inflation, pensions will increase by 0.4 percent in constant prices. If incomes increase by 1 percent more than inflation, then pensions will decrease by 0.6 percent in constant prices. When balancing has been activated, the balance index replaces the income index in the indexation of pensions.

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 2.2 percent in conventional insurance and 3.9 percent in fund insurance, after a deduction of 0.1 percent for costs.

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. 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 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 payout duration of the premium pension will then be longer.

Guaranteed Pension[10]

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.

In 2009 the maximum guaranteed pension for a single pensioner was SEK 7,597 per month (2.13 price-related base amounts[11]) and for a married pensioner, SEK 6,777 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 of the earnings-related pension; for higher incomes, the guaranteed pension is decreased by only 48 percent. This means

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

[11] In 2009 the price-related base amount was SEK 42,800.

that a single pensioner with a monthly earnings-related pension of SEK 10,950 or more received no guaranteed pension in 2009. For a married pensioner the corresponding income limit was SEK 9,701.

An example: A pensioner living alone has an earnings-related pension equivalent to 2.26 price-related base amounts. The guaranteed pension is reduced by the full amount of income up to 1.26 price-related base amounts. The remainder of (2.13–1.26 =) 0.87 price-related base amount is reduced by 48 percent of the income above 1.26 price-related base amounts, or by 0.48 price-related base amount, for a guaranteed pension of 0.39 price-related base amount. The total annual pension will then be 2.65 price-related base amounts.

Income-related pension + guaranteed pension
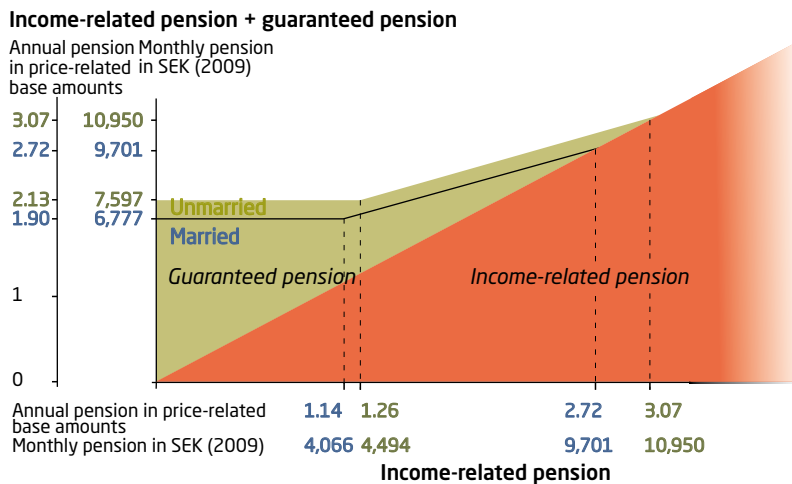
When the guaranteed pension is calculated, the premium pension is disregarded. Instead, the inkomstpension is calculated as if it had been earned at 18.5 percent of the pension base, rather than 16 percent. One reason for these provisions is that they are considered to simplify administration of the guaranteed pension. When the premium pension has become more substantial, the rules may be revised.

The guaranteed pension is financed directly 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 the 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 thereafter earn their entire pensions under the provisions for the inkomstpension and the premium pension. Beginning with the year when the individual reaches age 65, the ATP is adjustment-indexed in the same manner as the inkomstpension. For pension withdrawals before the year when the individual turns 65, the ATP is price-indexed.

Costs of Administration and Capital Management

The income statements of the inkomstpension and the premium pension show the costs reported by the Swedish Social Insurance Agency, the PPM 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,"[12] 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 PPM. 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 individual is 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, and normally[13] the indexation of pension capital and pensions is not affected, either. The costs reported net by the National Pension Funds affect only the assets of those Funds. Since only system assets, not liabilities, are reduced by these costs, their impact on the result of the system is negative. This means that costs reported net have a negative effect on the balance ratio. But this effect is small, as costs reported net are quite limited in relation to the pension liability.

Accounting for Total Costs

The total cost of insurance administration and capital management to the pension system, in addition to other charges, amounted to more than SEK 4.3 billion, of which SEK 2.1 billion is reported in the income statement of the pension system. The SEK 2.1 billion is the sum of the costs of insurance administration (1,265 million) and the operating expenses of the National Pension Funds (808 million). See the table Reported Costs and Charges of the Old-Age Pension System.

For the inkomstpension, the costs reported in the income statement for 2009 were SEK 1,730 million, of which 922 million are for insurance administration and SEK 808 million are for operating expenses of the National Pension Funds. This amount (1,730 million) is charged in principle to the inkomstpension accounts of the insured in the Orange Envelope, though with certain differences related to periodization. In addition to the 808 million in operating expenses, the National Pension Funds had fixed management fees of SEK 489 million. The sum of reported capital management costs shown in the income statements of the National Pension Funds was thus SEK 1,297 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

[12] 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 Authority represent the net of the items referred to as administrative costs and rebates on administrative costs.

[13] Only when balancing is activated do the costs of the National Pension Funds reported net affect indexation of pensions.

SEK 170 million in performance-based fees and SEK 208 million in brokerage and other transaction costs. When these costs and charges are included, the total costs of the inkomstpension are SEK 2,597 million.

The income statement of the premium pension shows administrative costs of SEK 336 million. That sum does not include SEK 7 million for management of conventional insurance, 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 343 million; see the item of Total, insurance administration, in the table below. For the premium pension, the item of fixed management fees refers to fees charged by the premium pension funds after rebates have been returned to premium pension savers. As the fee was SEK 829 million, and rebates were SEK 1,405 million, the fee before rebates was SEK 2,234 million. In addition to the SEK 829 million in fixed management fees, the sum of capital-management expenses and charges consist of SEK 565 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).

Reported Costs and Charges of the Old-Age Pension System, Millions of SEK

	Inkomst-pension	Premium pension	Total
Collection of contributions, etc. (National Tax Board)	378	59	437
Pension administration	544 *	284	828
Total, insurance administration	922	343	1,265
Operating expenses of the National Pension Funds (reported gross)	808		808
Fixed management fees (reported net)	489	829	1,318
Total reported capital management costs	1,297	829	2,126
Performance-based fees**	170		170
Transaction costs***	208	565 ****	773
Total capital management costs and charges	1,675	1,394	3,069
Total costs	2,597	1,737	4,334

*   It has been decided that the Swedish Social Insurance Agency is to receive this amount from the National Pension Funds as compensation for costs of administration; the amount does not represent the agency's reported actual cost for the inkomstpension (see the table below captioned Cost of the Swedish Social Insurance Agency for the Inkomstpension).

**   This item represents fees that the National Pension Funds pay only if a particular manager achieves a certain agreed result.

*** 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.

**** The costs included here are only those of the funds that report the so-called total cost share (TCS) to the PPM. These funds account for roughly 95 percent of the capital in the premium pension system. The amount also includes costs of interest and coupon (dividend) taxes in the funds.

Costs of the Swedish Social Insurance Agency

The income statement of the pension system includes the compensation that National Pension Funds are required to provide to the Swedish Social Insurance Agency for its administrative costs. The accounting of the inkomstpension is on a cash basis rather than an accrual basis. The difference between the compensation received from the National Pension Funds and the cost reported by the Swedish Social Insurance Agency for the inkomstpension is offset by the compensation received by the agency two calendar years after the difference arises. The table below shows both the compensation decided, i.e.

the cost included in the annual report of the pension system, and the accrued cost, or "cost outcome," used in the time series below.

Costs of the Swedish Social Insurance Agency for the Inkomstpension, Millions of SEK

	2005	2006	2007	2008	2009
Opening balance	16	139	312	302	66
Compensation decided*	895	794	514	257	544
Cost outcomel**	772	622	524	493	519
Net income / -loss	123	172	-10	-236	25
For the year					
Closing balance	139	312	302	66	91

* Compensation from the National Pension Funds, the cost reported in the income statement of the inkomstpension.

** The cost included in the table Costs of the Old-Age Pension System and in the diagrams Costs per Insured.

Development of Costs, 2005–2009

To provide a perspective on costs, the tables below show cost items for each year beginning with 2005. 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 Old-Age Pension System 2005–2009, Millions of SEK
IP = inkomstpension, PP = premium pension

		2005	2006	2007	2008	2009
Collection of contributions, etc. (Swedish Tax Agency)	IP	279	403	287	353	378
	PP	43	63	45	55	59
Pension administration	IP*	772	622	524	493	519
	PP	244	272	273	382	284
Total, insurance administration	IP	1,051	1,025	811	846	897
	PP	287	335	318	437	343
Operating expenses of the National Pension Funds (reported gross)	IP	663	700	752	778	808
	PP	–	–	–	–	–
Fixed management fees (reported net)	IP	521	526	546	498	489
	PP	697	892	924	758	829
Total reported capital management costs	IP	1,184	1,226	1,298	1,276	1,297
	PP	697	892	924	758	829
Performance-based fees	IP	248	146	257	294	170
	PP	–	–	–	–	–
Transaction costs**	IP	369	424	435	407	208
	PP	503	537	713	592	565
Total capital management costs and charges	IP	1,801	1,796	1,990	1,977	1,675
	PP	1,200	1,429	1,637	1,350	1,394
Total costs	IP	2,852	2,821	2,801	2,823	2,572
	PP	1,487	1,764	1,955	1,787	1,737

* The amount for the inkomstpension refers to actual cost, whereas the amount in the table Reported Costs and Charges of the Old-Age Pension System refers to the compensation paid by the National Pension Funds for costs of administration.

** See the explanation in the table Reported Costs and Charges of the Old-Age Pension System.

The table shows that the costs of the inkomstpension decreased in the past year. It is also shown that the costs of the premium pension decreased slightly in 2009.

In order to compare the size of costs in relation to the "capital" from which the costs are deducted, the amount of the pension liability is shown in the table.

Pension Liability/Capital from Which Cost Deduction Was Taken, 2005–2009, Billions of SEK

|		2005	2006	2007	2008	2009
Pension liability from which	IP*	4,613	4,751	4,910	5,157	5,002
cost deduction was taken	PP	193	269	310	233	343

* The inkomstpension liability to the economically active, that is, excluding ATP and inkomstpension under disbursement. There is no reduction of pensions for costs.

By agreement between the Swedish Social Insurance Agency and the PPM, joint costs of the inkomstpension and the premium pension are allocated, as from 2005, according to their respective proportions of the total contribution, i. e. 16/18.5 and 2.5/18.5. The largest joint cost is for the work of the Swedish Tax Agency in collecting contributions and in calculating and confirming pension-qualifying income. Other cost items include producing and distributing the Orange Envelope and maintaining the pension website, minpension.se. Before 2005, the inkomstpension financed virtually all joint costs.
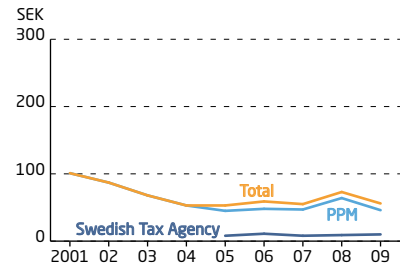
Capital Management Costs in Relation to Capital Managed

Yet another way to view the costs of capital management is to compare them with the capital under management. 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 PPM 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 2009 the total capital management costs for these funds and for the much smaller Sixth National Pension Fund was 0.17 percent of the capital managed. The performance-based fees of the National Pension Funds were 0.02 percent, and transaction costs were 0.03 percent. Consequently, total capital management costs and charges amounted to 0.22 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 0.21 percent; the total of capital management costs and charges was thus 0.52 percent of the capital managed. However, the differences in costs are due not only to disparity in economies of scale, but also to the type of investment. Thus, the funds in the inkomstpension system invest some 36 percent of their capital in bonds or similar securities, with relatively low management costs compared to stocks, whereas in the premium pension system, only about 7 percent of assets are invested in such assets.
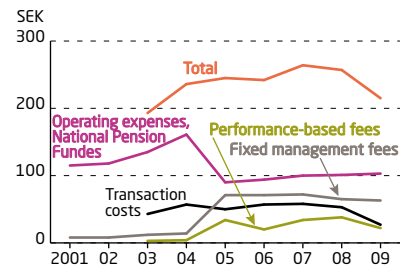
Costs per Insured, 2001–2009, SEK
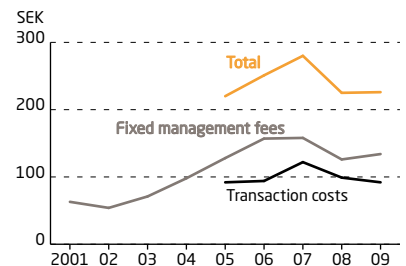
Insurance Administration, Inkomstpension
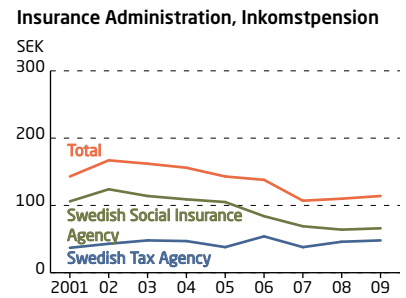
Insurance Administration, Premium Pension
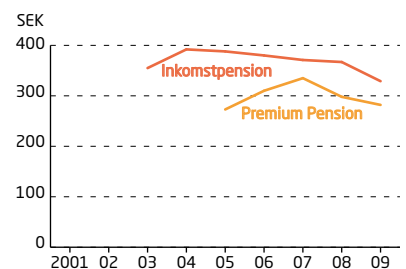

Capital Management Costs and Charges Inkomstpension

Capital Management Costs and Charges Premium Pension

Total Costs

Capital Management Costs in Relation to Capital Managed, 2005–2009, Percent

		2005	2006	2007	2008	2009
Operating expenses of the National Pension Funds (reported gross)	IP	0.09	0.09	0.09	0.10	0.11
	PP	–	–	–	–	–
Fixed management fees (reported net)	IP	0.07	0.06	0.06	0.06	0.06
	PP	0.42	0.40	0.33	0.30	0.31
Total reported capital management costs	IP	0.16	0.15	0.15	0.16	0.17
	PP	0.42	0.40	0.33	0.30	0.31
Performance-based fees	IP	0.03	0.02	0.03	0.04	0.02
	PP	–	–	–	–	–
Transaction costs	IP	0.05	0.05	0.05	0.05	0.03
	PP	0.30	0.24	0.25	0.23	0.21
Total capital management costs and charges	IP	0.24	0.22	0.23	0.25	0.22
	PP	0.72	0.64	0.58	0.53	0.52
Average capital managed*	IP	707,695	813,564	878,205	802,780	767,078
	PP	167,711	226,014	283,972	254,336	270,173

* Calculated as capital at the beginning of the year + capital at year-end divided by two. Millions of SEK.

## Actual Cost Deductions Taken, 2005–2009

In 2009 the deduction from pension balances for costs was 0.0189 percent in the inkomstpension system. The deduction for costs is only done until pension disbursement begins. Neither the fixed management fees of 0.06 percent of capital managed, the performance-based fees of 0.02 percent of capital managed, nor the transaction costs of 0.03 percent of capital managed are charged to pension savers through a deduction for costs. In the pension projections in the Orange Envelope, the deduction for costs is assumed to remain constant at 0.045 percent.

In 2009 the deduction for the costs of administration of the premium pension was 0.19 percent, based on the capital managed in the premium pension system as of May 1, 2009. Here the cost deduction continues even after pension disbursement begins. The average cost deduction by fund managers after rebates was 0.31 percent in 2009. In addition, there were transaction costs of approximately 0.21 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 0.19 percent to around 0.07 percent, rebates to pension savers are anticipated to increase.

Deductions for Costs, 2005–2009, Percent

	2005	2006	2007	2008	2009
IP	0.0509	0.0312	0.0440	0.0226	0.0189
PP, PPM	0.22	0.16	0.13	0.16	0.19
PP, funds	0.42	0.40	0.33	0.30	0.31
PP, total	0.64	0.56	0.46	0.46	0.50

Costs of the Premium Pension

Percent   Billions of SEK
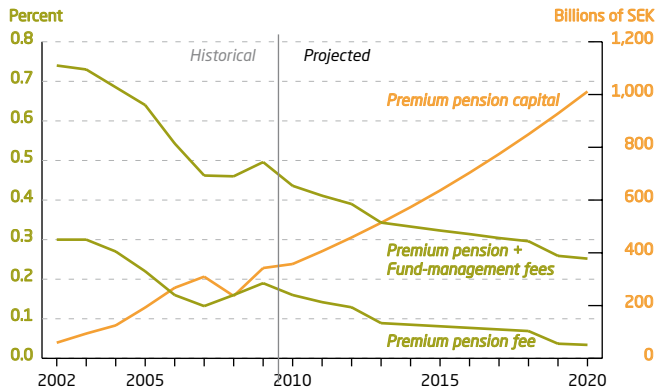
One would expect the cost deducted from inkomstpension accounts to correspond to the cost reported in the income statement of the inkomstpension. That amount, divided by the pension liability – the inkomstpension account balances of the insured – for which disbursement has not yet begun would be the 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 to 100 percent (see Note 11). Another reason is that the costs deducted from estimated account balances 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 next 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 ongoing basis.

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.

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. Another difference is that the change in the value of the inkomstpension is the same for everyone, whereas the return to premium pension savers may vary considerably from one individual to another, depending on the type of funds chosen.

Changes in Value During 2009

In the inkomstpension system, pension balances are normally revalued by the change in the income index. Unlike the premium pension system, the change in value takes place only at the outset of each year. At the beginning of 2010, the income index was raised by 0.3 percent, compared to 6.2 percent at the beginning of 2009. However, since balancing was activated in 2010, it is more relevant to measure the change in value by the balance index, which is used as the index as long as balancing remains activated. At the outset of 2010, the balance index decreased by 1.4 percent, thus lowering the accumulated inkomstpension credit of the economically active by the same percentage at this time.

For retirees, the inkomstpension and the ATP were cut by a further 1.6 percent. The decrease was an effect of so-called adjustment indexation, which means that the change in the index is reduced by the interest rate of 1.6 percent that has already been credited to the inkomstpension in the annuity divisor (see the section "How the National Pension System Works"). Thus, the inkomstpension and ATP of retirees were reduced by a total of 3.0 percent.

The inkomstpension is also affected – indirectly – by developments on capital markets, as the National Pension Funds, which serve as buffer funds in the inkomstpension system, invest a large portion of their capital in stocks. 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 (for a more detailed discussion, see the section "How the National Pension System Works").

The premium pension system is strongly impacted by the development of capital markets. During 2009 there was a substantial recovery on Swedish and foreign capital markets; as a consequence, the return for pension savers, measured as the internal rate of return, was a full 34.9 percent. For retirees, the average disbursement of premium pension for 2010 rose by 28 percent. Pensions from the premium pension system are limited so far, however, as the system is still in an early build-up phase.

Annual Indexation of Inkomstpension Accounts and Return on Premium Pensions, 2000–2009, Percent

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Income index / balance index	1.4	2.9	5.3	3.4	2.4	2.7	3.2	4.5	6.2	-1.4
Return, premium pensions*	0.7	-8.6	-31.1	17.7	7.9	30.5	12.2	5.3	-34.3	34.9

* Capital-weighted return (internal rate of return), excluding return on pension credit under temporary management.

Inkomstpension and Premium Pension
– Comparison of Changes in Value

One reason for establishing the premium pension as complement to the pay-as-you-go system was that variations over the years in the growth of earnings and return on capital could tend to offset each other. Developments in 2008 and 2009 are 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 good overall return for the pension system. In 2009 the return on capital was strongly positive and thus helped to offset the balancing at the outset of 2010. The spreading of risk will become more important in the future as premium pension funds account for a growing share of total pension capital. In some cases, however, this will not prevent declines in asset values that coincide with decreases in the income index / balance index.

Value of SEK 100 Paid into the Inkomstpension System in December 2000 (Income Index / Balance 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
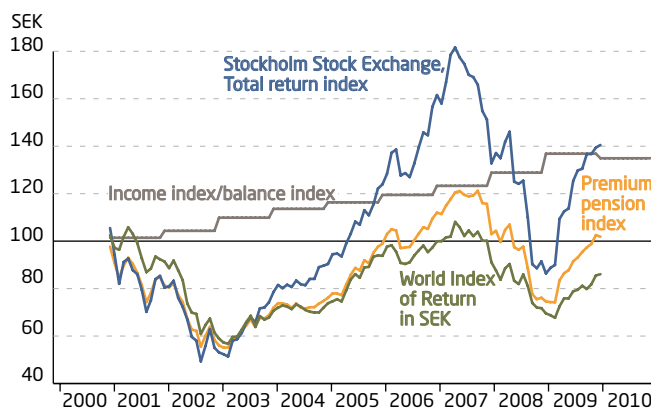
Return index for the Stockholm Stock Exchange according to Affärsvärlden, World Index of Return on Stocks according to Morgan Stanley Capital International Inc., converted into SEK.

In December, 2000, premium pension savers could begin investing their capital in the funds of the system. For a few years before then, the capital had been under temporary management, which had invested it in an interest-bearing account at the Swedish National Debt Office (Riksgälden). The value of an amount invested at the outset of 2000 has varied considerably over the years. For instance, the premium pension system has gone through two sharp stock-market downturns and two upswings: the downturn in 2000–2003, the upswing in 2003–2007, the downturn in 2007–2008 and the upswing in 2009. At the end of 2009, the premium pension index had risen overall by 0.3 percent per year since the system began operating.[14] This may be compared with the income index / balance index, which increased by 3.0 percent per year.

The return index for the Stockholm Stock Exchange rose much more than the premium pension index in 2003–2007, and it then dropped more precipitously in 2008. The recovery in 2009 was also much more pronounced on the Stockholm Stock Exchange than in the premium pension index. The

[14] 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 (the so-called time-weighted return). Individual pension savers have normally had a different average rate of return, depending not only on their investment profile, but also on the amount of capital individually invested at different points in time. This return is termed the internal rate of return or the capital-weighted return.

principal explanation for the different paths of development is that premium pension savers had invested primarily in foreign stocks. Moreover, some investments were in interest-bearing funds that provided a steadier return. Premium pension savers investing in foreign funds were somewhat adversely affected in 2009 by the stronger exchange rate of the Swedish krona.

Those who have refrained from selecting funds, and thus had their moneys invested in the Premium Saving Fund and managed by the Seventh National Pension Fund, have obtained almost exactly the same return as the average investor making an "active" choice.

Changes in Value as Measured by the Internal Rate of Return

The type of measure of the change in value, or return, shown above is sometimes called the "time-weighted" return, and it does not take into account the change in the amount of capital during the period of saving. What is shown for the premium pension system is how the value of one krona paid in has changed on average over a certain period. For individual savers in the premium pension system, it is important to show the return by another measure, namely the internal rate of return. The reason is that since the beginning, the capital in pension savers' accounts has increased considerably as the system has been 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 internal rate of return, or the "capital-weighted" return, takes this difference into account by assigning greater weight to 2005 than to 2002. In the calculations of internal rate of return by the Swedish Pensions Agency, consideration is also given to other factors, such as management fees, rebates and inheritance gains.

Average Annual Internal Rate of Return for All Premium Pension Savers until Different Points in Time during the Years 2000–2009
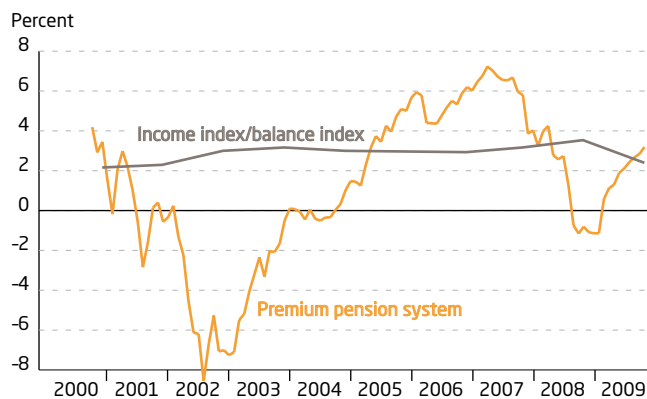

Each point on the curve shows the average annual internal rate of return (after 1995) until the time concerned

The diagram shows the development of the internal rate of return in the premium pension system, together with a parallel calculation of the internal rate of return that pension savers would have obtained if their contributions to the premium pension had earned a return equal to the growth in the income index / balance index. By this measure, the internal rate of return through the end of 2009 would have been 2.1 percent per year. This may be compared with the actual internal rate of return for the premium pension: 3.2 percent through 2009. From the diagram it is apparent that the corresponding calculation through 2008 was minus 0.8 percent for the premium pension system and plus 3.5 percent with the income index. Note that the curve does not show

the actual internal rate of return of inkomstpension savers, since the capital structure of the inkomstpension system is considerably different. It may also be interesting to note that in the pension forecasts to the insured by the Swedish Pensions Agency, the premium pension is assumed to provide a return that is 3.5 percentage points higher than the growth in incomes. This margin has not been achieved during the quite brief period observable thus far.

The bar graph below shows the internal rate of return for pension savers by year of entry into the system. For pension savers earning their first pension credit in 2008, the development of value has been favourable, since for most of the stock market downturn of 2008 their moneys were under so-called temporary management with a return of about 4 percent. These moneys were subsequently invested in premium pension funds that benefited from the upswing in 2009.

Average Internal Rate of Return per Year for Premium Pension Savers by Year of Entry into the Fund System

Percent

Year of entering the premium pension system
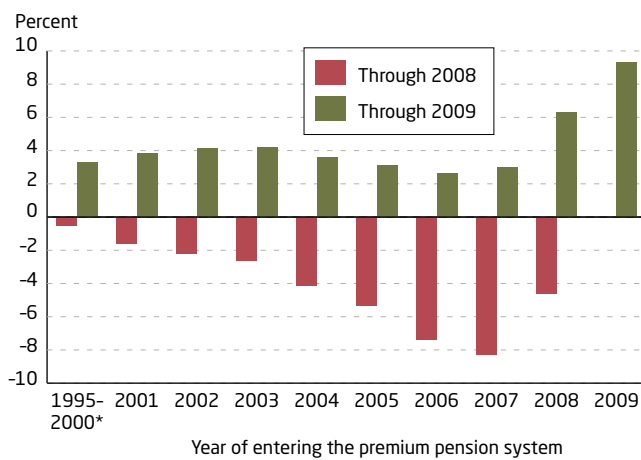
* These pension savers constitute a very large majority of the total number (72 percent)

It may also be interesting to review the distribution of internal rate of return among pension savers who have been in the system for an equally long time. Of pension savers joining the premium pension system at its inception in 1995, about 97 percent had obtained a positive change in value through the end of 2009. Until the end of 2009, 13 percent had had a positive change in value, on an annual basis, of more than 6 percent, or 4.7 percent in real terms. It may be noted that one year earlier, at the end of 2008, only 35 percent had benefited from a positive nominal change in value. Thus, for the premium pension system the cumulative change in value may vary considerably even over a period as short as one year.

Pension Savers Who Began Paying into the Premium Pension System in 1995, by Levels of Internal Rate of Return through 2009

Yearly average change in value, percent
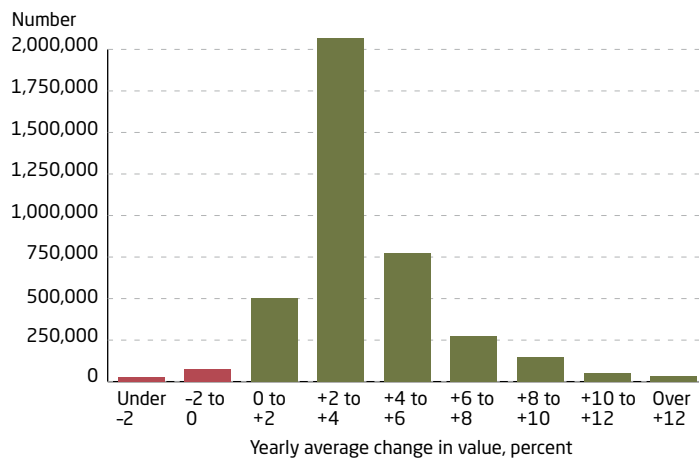
Since the data refer to participants since 1995, the reason for the considerable spread is not that they entered the system at different times (compare the previous figure showing the distribution by year of entry). Rather, it is primarily the choice of fund investments with substantial differences in return.

Importance of a Long-Term View

The aspects of the pension system that relate to its change in value cannot be evaluated 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. During the 91-year period from 1918 to 2009, the average real rate of return on the Stockholm Stock Exchange was 6.8 percent per year (a nominal return of 9.6 percent per year). However, this does not provide assurance of 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, 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.

Real Rate of Return on the Stockholm Stock Exchange and Real Earnings per Employee in Sweden
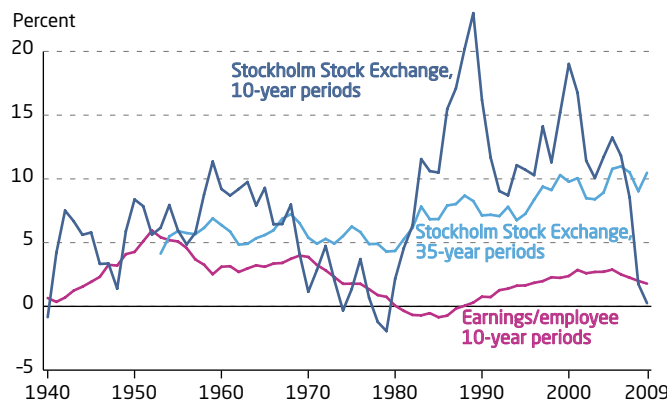
For each year the curves show the real total rate of return (incl. dividends) per year for the preceding 10 and 35 years, respectively, and the percentage change per year in real earnings per employee for the preceding 10 years.

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. Histori-

cally, the real development of value over 35-year periods has also been more stable, as is shown in the diagram.

Only over a 35-year period is the real change in value for stocks reasonably comparable in stability to the development of real earnings over a 10-year period. The development of real earnings is the principal factor governing the change in the value of the inkomstpension. However, real earnings per employee during the period 1918–2009 increased by 2.5 percent per year, much less than the real rate of return on stocks, which was 6.8 percent per year. The difference was greatest in the past 2–3 decades.

1934

Women   *Men*

2009

2084 Base Demography

2084 Pessimistic Demography

Number
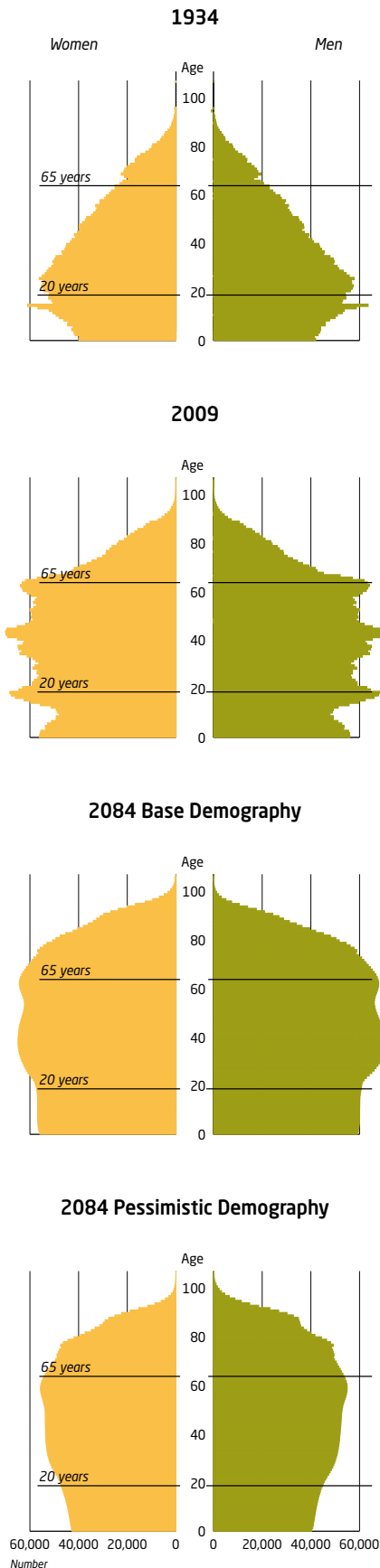
Source: Statistics Sweden (SCB)

Three Scenarios
for the Future of the Pension System

To show how different developments can affect the financial position of the pension system and the level of pension benefits, projections are presented for the evolution of the system over the next 75 years.

The long-term financial development of the inkomstpension system is described below in three different projections, referred to as the base, optimistic and pessimistic scenarios, and the assumptions for the calculations are the same as in previous Orange Reports. Thus, there has been no adjustment of the return on funds, for example, since the primary purpose of the projections is to illustrate the longer-term development of the system under different conditions. In the base scenario, which starts with the latest population forecast by Statistics Sweden, it is assumed that incomes will grow by 1.8 percent annually in real terms and that the real annual rate of return on buffer-fund assets will be 3.25 percent. In the other two scenarios, assumptions have been made about more and less positive paths of development for the finances of the inkomstpension system.

The three projections extend 75 years into the future. The projected population structure in 75 years is different from the structure in Sweden today, as is illustrated by the population pyramids in the margin. In the base and optimistic scenarios, the demographic assumptions are the same. For comparison, the population pyramid 75 years ago, that is, in 1934, is also shown. At that time the remaining life expectancy of a 65-year-old was roughly 13 years; today it is about 20 years, and in 2084 it is expected to be 24 years. The share of the population aged 65 or above was 9 percent 75 years ago; today just 17 percent. In 2084 the proportion is expected to be more than 24 percent in the base demography scenario and about 35 percent in the pessimistic demography scenario

The results of the projections are reported as calculations of net contribution, size of buffer fund, balance ratio and average pension level for new pensioners. In summary, net contributions will be negative in all three scenarios beginning in 2009 and for quite a few years thereafter. Pension disbursements are thus projected to exceed contribution revenue, but only in the pessimistic scenario does this trend ultimately exhaust the buffer fund. The reason why the fund is used up is that both the working-age population and the return on the buffer fund are low in this scenario.

The financial position of the pension system deteriorated during 2009 – see the section "Orange Report 2009 in 7 Minutes". Balancing was activated for the first time in 2010. As the balance ratio for 2011 has been estimated at 0.9549, balancing will be activated in that year as well. As a result, disbursements of the inkomstpension and ATP during 2011 will be reduced by 4.5 percent compared to a situation without balancing. The reduction will be partly off-set by a higher guaranteed pension. Pensioners with an income-related pension between 1.26 and 3.07 price-related base amounts (1.14–2.72 for married persons) will receive compensation for 48 percent of the reduction through a higher guaranteed pension, while those with a lower pension will receive full compensation. In 2009 there were 567,000 pensioners with a guaranteed pension in the interval with a 48-percent deduction. In the interval with a 100-percent deduction of the guaranteed pension, the number was 199,000. The diagram on page 23 shows the effect of balancing on the total pension.

Pensioners with only a guaranteed pension or a low inkomstpension will not be affected at all by balancing. As the inkomstpension component of the total pension increases, and the guaranteed-pension component decreases, the balancing effect increases. An individual with a pension of at least SEK 135,000 in 2010 will also be above the limit for a guaranteed pension after the balancing for 2011. At that level of income, the balancing effect will no longer be softened by the guaranteed pension.

Effect of Balancing on the Total Pension in 2011

Percent
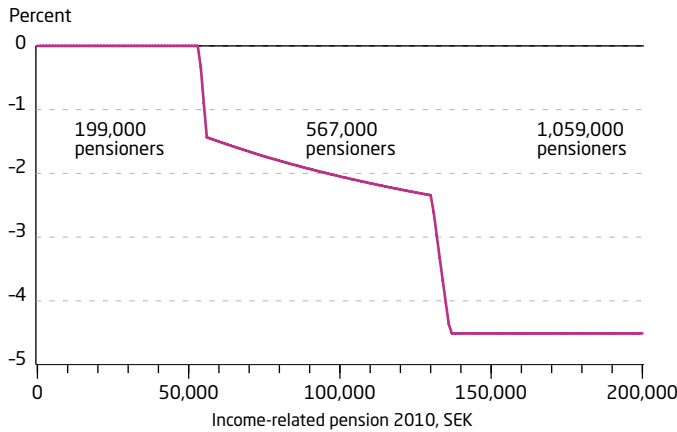
Balancing will be activated for different lengths of time in the three scenarios. In the base scenario, the balance ratio is expected to be around 1.0 until 2035.

This chapter concludes with a discussion on the calculation of pension levels and compensation rates. In addition to the pension levels in the projections, compensation rates provided in each individual's Orange Envelope are also presented. These compensation rates have been calculated through division of each individual's projected pension at 65 by her/his own income.

Base Scenario

The demographic development in the base scenario follows the latest population forecast of Statistics Sweden from 2009. In this projection the birth rate is assumed to be 1.83 children per woman during the period through 2025, with nativity then dipping slightly but never below 1.82 children per woman. In 2009 the average life span for men was 79 years; it is expected to increase to 84.2 years in 2050. For women the average life span is expected to increase from 83 to 86.5 years during the same period. For the remainder of the time until the end of the projection period in 2084, the average life span will increase by another 2 years for both men and women. In the past 20 years net immigration has averaged 24,400 persons per year. In 2006, because of the temporary asylum law, net immigration was 50,000 persons, and net immigration was high in 2007 and 2008 as well at about 54,000 persons. For the initial years of the projection until 2015, it is assumed that net immigration will be high. After 2015, net immigration will decline continually to 18,000 in 2084. The proportion of persons aged 16–64 with an income over one (1) income-related base amount is assumed to remain in

the long run at a level around 88 percent, roughly equivalent to an employment rate of 78 percent by the definition used in the Labour Force Surveys (AKU). Real growth in average income is assumed to average 1.8 percent per year. The real rate of return on the buffer fund is assumed to remain unchanged at 3.25 percent per year. The same return, after costs of administration, has been assumed for the premium pension funds in the calculation of the future premium pension for a newly retired individual.

Optimistic Scenario

The demographic assumptions are the same as in the base scenario; the two scenarios differ only in respect to economic factors. In the optimistic scenario, the proportion of persons aged 16–64 with an annual income exceeding one income-related base amount is 86 percent; real annual growth in average income is 2.0 percent after 2010; and the real rate of return on the buffer fund is 5.5 percent. The return for the premium pension system, after costs of administration, is also assumed to be 5.5 percent in real terms. By historical standards, neither the assumed growth rate nor the assumed rate of return is particularly high.

Net Contribution

The size of pension disbursements depends on the rules of the system and their interaction with demographic and economic developments. Since birth cohorts vary in size, and to some extent have worked to different degrees, the contribution revenue and pension disbursements of the system vary over time. To permit comparison of net contributions in the three scenarios – that is, contribution revenue received minus pensions disbursed – the net contribution in each scenario has been divided by the contribution revenue in that scenario. The volume effect of different growth rates on the monetary value of the net contribution is thus eliminated.
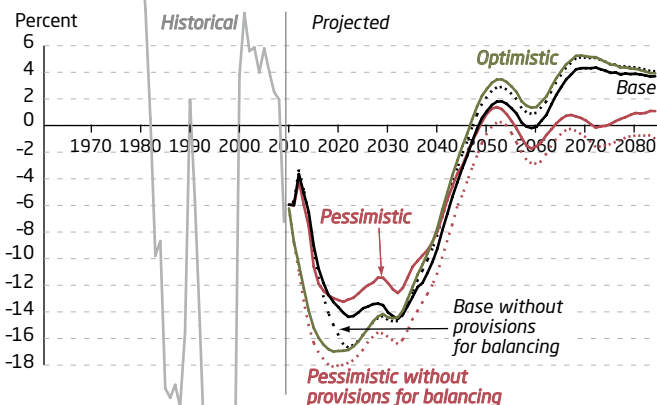
When the ATP system was introduced in 1960, contributions exceeded pension disbursements, which were initially limited; in proportion to contributions, there was a large surplus. From 1980 on, net contributions have varied considerably. The variations have been due primarily to changes in rules; the changes regarding the contribution percentage affect revenue, and the changes in the calculated base amount impact expenditure. To a lesser degree, the variations in net contribution have been due to changes in the number of pensioners and in the number gainfully employed.

As expected, the net contribution was negative in 2009, primarily because the large birth cohorts of the 1940's are now leaving the labour force and retiring. Around 2020 the weakening trend begins to lessen, and the net contribution deficit gradually diminishes. Revenue exceeds expenditure after 2049 (2046 in the Orange Report 2008) in the base scenario, and around 2048 (2043) in the optimistic scenario. In the pessimistic scenario, on the other hand, the net contribution remains negative until 2049 (2050).

Buffer Fund

The size of the buffer fund can be expressed in terms of fund strength, that is, fund capital at year-end divided by pension disbursements for the year. Fund strength shows how many years of pension disbursements can be financed by the fund without additional contributions or a higher return on assets. The varied development of the buffer fund

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

in the three scenarios is due to differences both in net contributions and in the assumed return on the buffer fund.

Historically, fund strength has been high. As the number of ATP pensioners has increased, fund strength has decreased. Since 1990, fund strength has averaged slightly less than five years. At the end of 2009, fund strength was 3.8 years, compared to 3.2 at the end of 2008.

In the base scenario, fund strength gradually decreases because of the net contribution deficit. Fund strength will be lowest in 2046 (2045) at less than 1.3 (0.8) times annual disbursements.

In the optimistic scenario, there is a substantial increase in fund strength. The explanation is the limited contribution deficit and the high rate of return on the fund in relation to the development of average income. Fund strength is equivalent to nearly six years of pension disbursements in 2050 and to 10 years of disbursements in 2065.

In the pessimistic scenario, the buffer fund is exhausted by 2043 and is slightly negative thereafter. Thus, even though balancing is activated, the fund is used up and turns negative. The principal explanation[15] is that in the calculation of turnover duration, the population is implicitly assumed to be constant. With a declining trend in the working-age population, this assumption means that turnover duration is somewhat overestimated. Balancing was deliberately designed not to eliminate the risk of exhausting the buffer fund. This risk has been addressed by authorizing the funds to borrow money. Any borrowing is to take place via the National Debt Office.

When the assumed population decrease comes to a halt, the buffer fund is guided toward fund strength of at least zero. During the years when the fund is negative, interest is paid on amounts borrowed. In the diagram it is assumed that the interest rate on these loans, taken via the National Debt Office, is the same as the assumed rate of return in the scenario, i.e. 1 percent.

[15] One contributing cause is the lag between the time when the deficit arises and the time when balancing corrects it.

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Fund Strength
Size of buffer fund divided by pension disbursements in the same year

Births, Deaths, Immigration and Emigration, 1928-2009 and Assumptions Through 2084
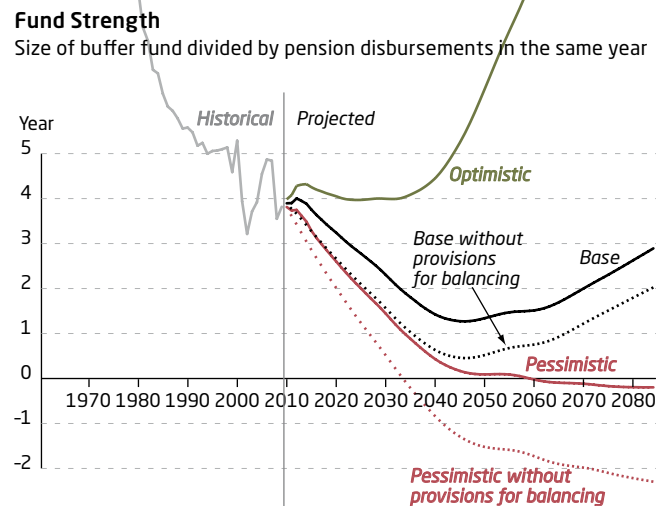
Comments on the Assumptions in the Scenario
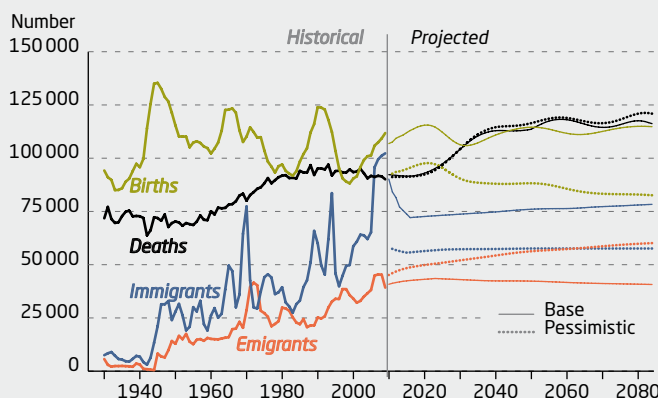
The diagram shows population growth over the past 75 years and the assumptions about it for the next 75 years. The large birth cohorts of the 1940's, 1960's and 1990's stand out clearly. The number of deaths increases each year, not because mortality is on the rise, but because the population is growing. The peak years for immigration are the 1960's and 1970's, when there was substantial immigration of labour, primarily from Finland. There was another peak in the early 1990's, with numerous refugees from ex-Yugoslavia. The peak levels of immigration in the last few years are also shown clearly. The demographic conditions are the same in the base and optimistic scenarios.

Financial Position of the Inkomstpension System

The financial position of the inkomstpension system is expressed in terms of the balance ratio. When the balance ratio drops below one, liabilities exceed assets, and balancing is activated. In principle, a balance ratio of 2.0 – that is, when assets are twice as great as liabilities – means that the system is fully funded.

The balancing that reduced indexation by 1.7 percent at year-end 2009 was largely a consequence of the global financial crisis and the losses then sustained by the buffer fund. The subsequent balancing was due primarily to the lower rate of increase in the contribution base.

In the base scenario, the balance ratio fluctuates around 1.0 until 2035; variations are greater at the outset of the period and gradually diminish. The balance ratio will gradually strengthen after 2035 because of demographic factors, and because the return on the buffer fund will be higher than the income index. The balance ratio will not reach 1.1 percent during the projection period, a level which as proposed by the government report *Utdelning av överskott i inkomstpensionssystemet* (Distribution of Surpluses in the Inkomstpension System), SOU 2004:25, means that there is a distributable surplus. However, no provisions to this effect have been enacted by the Swedish Parliament.

In the optimistic scenario, the balance ratio exceeds 1.0 by 2012 and strengthens after 2015. With the less negative deficit in the contribution base and the high return, the buffer fund will strengthen continually during the period. Beginning in 2039, the balance ratio will exceed 1.1.

In the pessimistic scenario balancing continues. One reason is the less favourable growth of the population; the other is the low return on the buffer fund. With balancing, the liability of the system accrues interest at the same rate as the growth in system assets. As a result, the balance ratio stabilizes around 1.0.

Balance Ratio
(Contribution asset + buffer fund) / pension liability
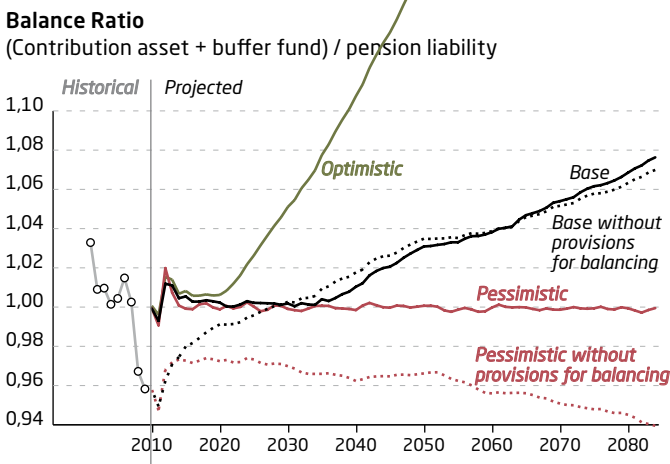
Population Size, etc.
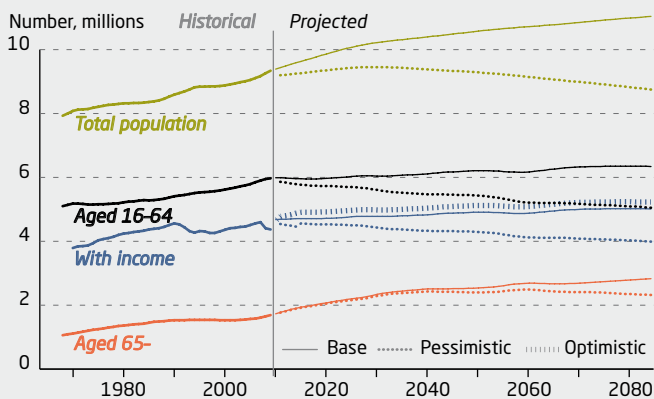
The scenarios do not differ significantly in respect to the number of persons over 65, as the assumptions regarding mortality are the same in all scenarios. The number of persons with income refers to those with earnings above one income-related base amount. The historical data are estimates.

The assumption about the proportion with an income is the same in both the base scenario and the pessimistic scenario. In the optimistic scenario the proportion with an income is higher

Development of Pension Levels for Different Birth Cohorts

The pension level is defined here as the average national pension benefit at age 65 in relation to the average pension-qualifying income for persons aged 16–64 with such income. For this level to be constant, one requirement is a roughly constant relationship between the number of economically active years and years of retirement. If this condition is to be satisfied at the same time as life expectancy is increasing, either the retirement age must be raised, or the age of entry into working life must be lowered. Moreover, for the value of pensions to remain constant in relation to incomes, balancing must not be activated.

In the scenarios, the average national pension at age 65 as a percentage of average income is shown in the following bar graphs, one for each scenario.

In the base scenario, the average pension level for the year when the individual turns 65 drops from 66 percent for birth cohort 1944 to approximately 53 percent for birth cohort 1990. Approximately 9 percent of this decrease will be due to the expected increase in the average life span. As for the remainder of the decrease, one explanation is that the calculations are for persons with 30 years or more of working life in Sweden. In relation to the new system, the ATP system is especially generous to persons who have worked only 30 years. If working life is prolonged to neutralize the effect of longer life expectancy on pension levels, the pension level stabilizes at just above 60 percent of average income. A longer working life also increases pensions through the pension credit earned in the additional years. Of the total increase in life expectancy, therefore, about 67 percent should be added to years of working life while 33 percent can be added to life as a pensioner with an unchanged pension level. The table on page 30 shows the effect of the longer life span on the retirement age required to maintain the same level of pensions as for older birth cohorts.

The relationship between the return of the premium pension system and the growth in average income affects the relative size of the premium pension. The greater the positive difference between the rate of return and the rate of growth, the larger the share provided by the premium

Average Income and Pension, Base Scenario (Price level 2009)
Amounts in SEK

Year of birth	Pension at age 65	Average income	Pension level, percent
1944	12,000	18,300*	66
1965	14,400	25,300	57
1990	20,500	38,700	53

* An average monthly income for full-time work is about SEK 28,000 (according to the Wage Structure Statistics of Statistics Sweden for 2008, revised upward by the growth of average hourly earnings in 2009. The reason why average income is lower than this amount is that the calculation of average income includes all persons aged 16-64 - whether or not they have had any income in the year concerned. The only requirement for inclusion in the calculations is that the individual at age 65 has had at least 30 years of pension-qualifying income. Inclusion of individuals with part-time or seasonal employment lowers both average income and pensions. The exclusion of incomes above the ceiling from average income reduces the latter by about 10 percent.

Real Return on the Buffer Fund, 1960–2009, and Assumptions Through 2084

Percent

Historical   Projected

Optimistic
Base
Pessimistic

1960 1970 1980 1990 2000 2009 2010   2084
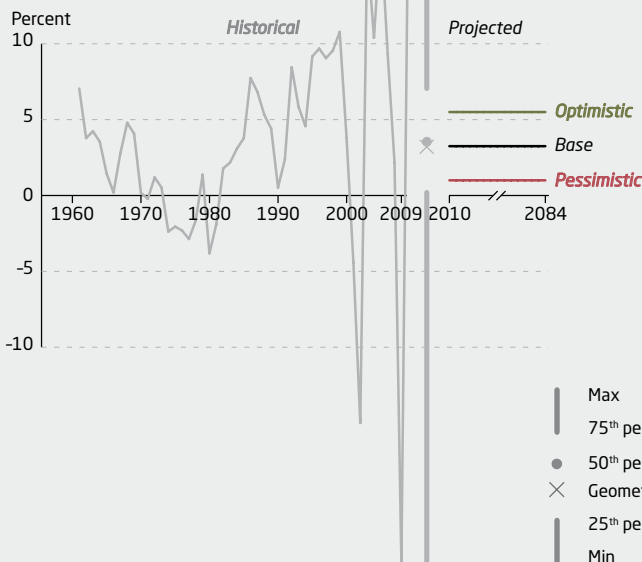
Growth in Real Earnings, 1960–2009, and Assumptions Through 2084

Percent

Historical   Projected

Optimistic
Base
Pessimistic

1960 1970 1980 1990 2000 2009 2010   2084

Max
75th percentile
50th percentile (median)
Geometric mean
25th percentile
Min
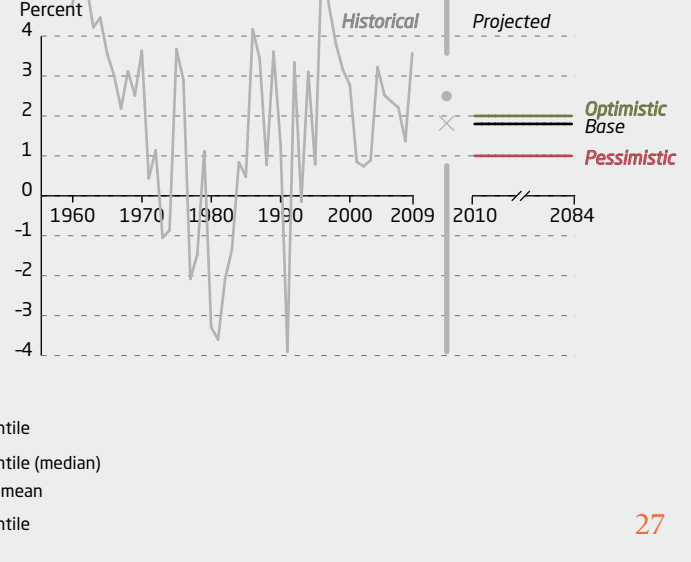
[16] Another reason why newly granted premium pensions are relatively greater is that the interest credited in the annuity divisor is higher for the premium pension than for the inkomstpension; see the section "How the National Pension System Works" and Appendix A.

pension. In the base scenario, the return of 3.25 percent for the premium pension system exceeds the assumed rate of growth in average income, which is 1.8 percent. As a result, the premium pension accounts for a disproportionately large share of the national pension in relation to the corresponding contributions.[16] For the youngest birth cohorts, the premium pension is about 11 percent of average income, and the inkomstpension is about 41 percent.

In the base scenario, the guaranteed pension for persons who have worked at least 30 years is small from the very beginning. Since the guaranteed pension is assumed to be unchanged in constant prices, its significance, in principle, decreases with each year of growth in incomes. From time to time, however there is a deviation from this tendency because of balancing.

The pension level of a birth cohort in relation to the average income at age 65 is affected by whether balancing is activated. The period of balancing beginning in 2010 will thus affect pension levels at age 65, especially for birth cohorts 1945–1949. The level of their pensions at age 65 will be roughly 3 percent lower in relation to average income. The negative effect of balancing on a newly granted pension will thereafter diminish gradually, disappearing entirely for those who retire after 2025.

In the optimistic and pessimistic scenarios, the growth in average income is higher and lower, respectively, than in the base scenario. As long as balancing is not activated, the inkomstpension accrues interest (is indexed) according to the growth in average income and thus increases at the same rate as average income. The relationship between pensions and average income is then unaffected by this growth, and pensions remain unchanged in proportion to income. On the other hand, the inkomstpension will of course be less in monetary terms if growth is lower and greater if growth is higher.

In the **optimistic scenario,** the return on the premium pension is 3.5 percent higher than the growth in average income, or 5.5 percent compared to 2.0 percent. The relatively large premium pension resulting from the high return compensates in part for the effect of longer life expectancy. If the retirement age were to increase at the same rate as

Average Pension at Age 65 as a Percentage of Average Income, Base Scenario
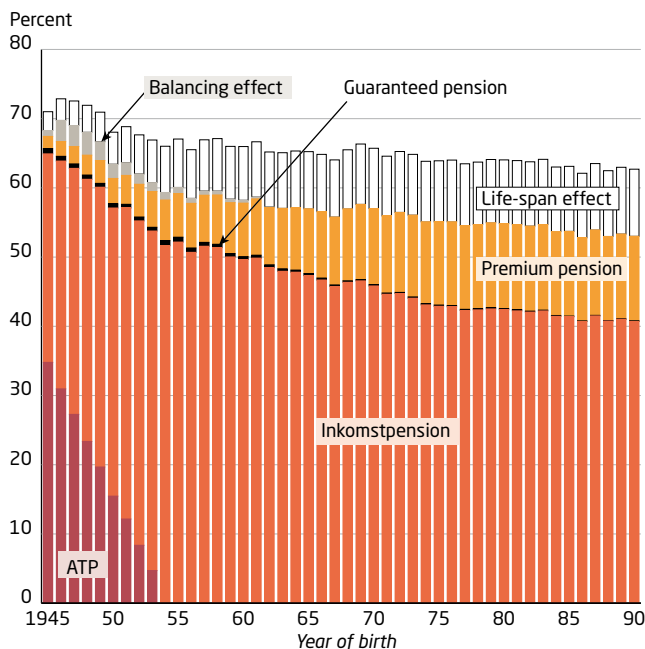
Other Assumptions in the Calculations

The assumptions for the scenarios apply from 2012 on. For 2010 and 2011, the forecast of the National Institute of Economic Research (NIER, Konjunkturinstitutet) in December 2009 applies. The scenario assumptions apply to the return on the fund as from 1 January 2010.

The guaranteed pension is price-indexed. Consequently, the lowest pensions will gradually decrease in relation to average income, as will the tax component of the pension contribution for individuals with modest incomes. The effect over 75 years is very powerful. If average annual income grows by 1.8 percent per year, it will be almost four times as great in 2084 as in 2009. Toward the end of the calculation period, therefore, the guaranteed pension is entirely marginal in amount.

With the pension liability indexed to growth in average income, it may appear unnecessary to vary the growth in average income in the scenarios, for the inkomstpension system is designed to adjust the value of pensions to the development of average income. However, since pension points earned are indexed by the rate of increase in prices, the inkomstpension system is initially unstable in relation to growth in average income. Furthermore, the relationship between the increase in average income and the return on the buffer fund influences the financial development of the inkomstpension. The relationship between the return and the growth in average income also affects pension levels via the premium pension. The three scenarios differ regarding the contribution of the buffer fund to the financing of the inkomstpension. In the base scenario the return on the buffer fund exceeds growth in average income by 1.45 percent (3.25-1.8). In the optimistic scenario the return exceeds growth in average income by 3.5 percent. In the pessimistic scenario, the return is equal to the rate of increase in average income.

life expectancy, the pension level would remain constant at about 70 percent for birth cohorts 1970–1990. In the optimistic scenario the balance ratio is below 1.0 in 2010 and 2011. Balancing continues until 2013 and thus affects pension levels at age 65 for birth cohorts 1945–1948. For persons born in 1945, the effect is 3.3 percent, and for those born in 1948 it is 0.8 percent.

In the **pessimistic scenario**, growth in average income is 1.0 percent, or 0.8 percent lower than in the base scenario. The rate of return is also lower, 1 percent instead of 3.25 percent. The lower rate of return means that the premium pension will be less both in monetary terms and as a share of the total pension. With income-related pensions relatively lower than in the base scenario, the guaranteed pension becomes more important.

In the pessimistic scenario the system is undergoing balancing for the entire projection period, thus affecting pension levels for all birth cohorts. For birth cohort 1945, the pension level is about 68 percent, whereas for birth cohort 1990, it is roughly 48 percent. For birth cohort 1990, balancing entails a reduction of 1.9 percent in the level of the earnings-related pension, whereas the guaranteed pension increases it by 0.3 percent. The guaranteed pension provides partial compensation for the reduction in the inkomstpension in the case of a negative development. This means that the central government finances a portion of the reduction. In situations where the resources of the general economy are normally decreasing, there is thus a greater element of income redistribution in the national pension system.

Average Pension at Age 65 as a Percentage of Average Income, Optimistic Scenario
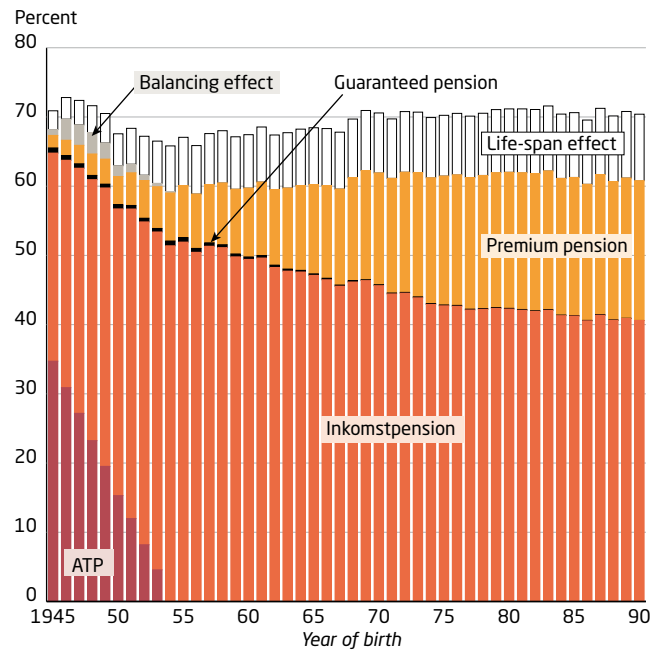
Average Pension at Age 65 as a Percentage of Average Income, Pessimistic Scenario
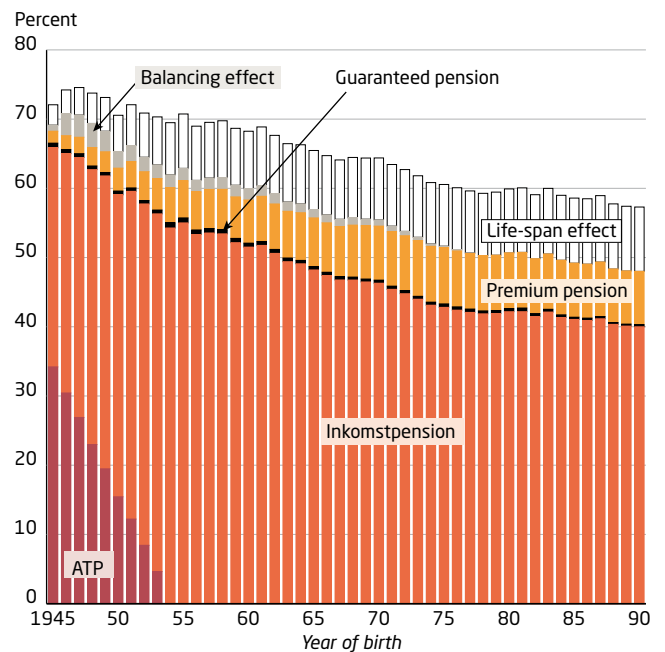
Life Expectancy Effect and the Required Retirement Age

The table shows the effect of the continued increase expected in the average life span compared with birth cohort 1930, which reached age 65 at the time of the decision on the principles for reforming the pension system. It is assumed by Statistics Sweden that the average life span will increase rather substantially in the years ahead. As a consequence, remaining life expectancy at age 65 will rise from 17 years and 5 months for persons born in 1930[17] to 22 years and 2 months for those born in 1990. This is equivalent to an increase in life expectancy of 4 years and 9 months for birth cohort 1990 relative to birth cohort 1930. If those born in 1990 are to have the same monthly pension level as those born in 1930, a portion of the anticipated increase in remaining life expectancy at age 65 must be spent working further. For birth cohort 1990

[17] No annuity divisors have been set for birth cohort 1930, whose initial pensions were calculated entirely by the rules of the ATP system.

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the duration of working life must be increased by 3 years and 3 months if this cohort is to receive a pension at the same replacement rate as persons born in 1930. At the same time, those born in 1990, despite the higher retirement age, can look forward to being pensioners for 1 years and 11 months longer than persons born in 1930.

The first birth cohort with a retirement age of 65 was born in 1911. When this cohort reached age 65 in 1976, the normal retirement age was lowered from 67 to 65. At that time the expected duration of their retirement was roughly 16 years, that is, about 1 year and 6 months less than for birth cohort 1930.

Life Expectancy and Retirement Age*

Birth cohort born in	..reaches 65 in	Life expectancy at 65	Retirement age required	Time spent retired**	… compared to birth cohort 1930
1930	*1995*	*82 yr 5 mo*	*65 yr*	*17 yr 5 mo*	*0*
1940	*2005*	*83 yr 7 mo*	*65 yr 11 mo*	*17 yr 11 mo*	*+6 mo*
1945	2010	84 yr 2 mo	66 yr 3 mo	18 yr 3 mo	+10 mo
1950	2015	84 yr 7 mo	66 yr 6 mo	18 yr 5 mo	+1 yr
1955	2020	85 yr 1 mo	66 yr 10 mo	18 yr 7 mo	+1 yr 2 mo
1960	2025	85 yr 6 mo	67 yr 1 mo	18 yr 9 mo	+1 yr 4 mo
1965	2030	85 yr 10 mo	67 yr 4 mo	18 yr 11 mo	+1 yr 6 mo
1970	2035	86 yr 2 mo	67 yr 7 mo	19 yr	+1 yr 7 mo
1975	2040	86 yr 6 mo	67 yr 10 mo	19 yr 1 mo	+1 yr 8 mo
1980	2045	86 yr 9 mo	68 yr	19 yr 2 mo	+1 yr 9 mo
1985	2050	86 yr 11 mo	68 yr 1 mo	19 yr 4 mo	+1 yr 11 mo
1990	2055	87 yr 2 mo	68 yr 3 mo	19 yr 4 mo	+1 yr 11 mo

*   The calculations show the retirement age required if the rules of the new system are fully applied. The required retirement age for birth cohorts 1940–1950 is thus overstated.

** Time spent retired is calculated as life expectancy at the required retirement age.

Remarks on the Pension Level and the Compensation Rate

There are numerous methods of calculating the compensation rate of a pension system. The income with which the estimated pension is compared can be defined in different ways, and there are many possible samples of individuals to select for the calculations.

Which income is appropriate for the comparison with estimated pension benefits depends on the income profile used in the calculation. If a straight-line income profile[18] is used, it is natural to compare the size of the pension benefit with the income of the individual in the year before retirement.

If a concave[19] income profile is chosen, the question what income to use for comparison with the pension becomes more difficult. If the compensation rate is calculated by comparing the pension with the final year's income, the resulting compensation rate may appear deceptively high. One way to manage the problem is to compare the pension with average income for a number of years prior to retirement, normally the average income at ages 60–64.

In calculations of the pension level in this chapter, the question of the income with which to compare a pension at age 65 has been handled differently. Here a pension is compared with the average income for all individuals in the calculation who are between the ages of 16 and 64. One reason for this approach is that it reduces the sensitivity of the pension level to assumptions about income profile. The comparison income chosen, however, has the obvious shortcoming that the pension level calculated says nothing, in principle,

[18] A straight-line income profile means that for all ages in the labour force income grows at the same rate as the general rate of increase in incomes until retirement age is reached. A straight-line profile thus means that all persons are assumed to have the same growth in income each year until they retire.

[19] With a concave income profile, the development of income for each age group will be age-specific each year until retirement. Normally incomes increase faster in the early years of working life and start dropping around age 57. One explanation for the decrease is that people at this age tend to cut back on work hours, a step that may be viewed as preparation for the transition to retirement.

about the change in income that may be expected when the individual begins to draw a pension. Therefore, the concept of pension level is used here to emphasize that what is shown is not a compensation rate.

The fact that the pension level as defined above in principle provides no information on the change in income at retirement does not prevent it from yielding such information in practice. The reason is that the average pension-qualifying income (PQI) for persons aged 16–64 is very close to the average PQI for persons aged 60–64. It does not matter much for the outcome which definition is used. Thus, the pension level calculated here is very similar to the compensation rate that would have resulted if the average income of each individual at ages 60–64 had been used as the comparison income. On the other hand, if the income at age 64 is used for comparison, replacement rates would increase in relation to the pension levels shown here.

For the pension levels shown, persons with fewer than 30 years of income of at least one income-related base amount at age 65 are excluded from the calculation of the average pension and average income. The reason is that the pension level is intended to reflect conditions for individuals who have spent most of their working life under this pension system.

Another question is whether to include incomes not insured in the national pension system in the calculation of the comparison income. Here we have chosen to include only income insured in the national pension system. Of all pension-qualifying income in Sweden, roughly 11 percent exceeds the pension-credit ceiling of 8.07 income-related base amounts. If income above the income ceiling is added to the comparison income, defined as average PQI for persons aged 16–64 with PQI, the average PQI increases by 11 percent, reducing the pension level by about 10 percent.

Here gross pensions are compared with gross incomes. In 2007 a tax credit for earned income became effective. Because of this credit, the tax on pensions is no longer the same as the tax on most of the income included in pension-qualifying income. In 2008 and 2009 the tax credit for earned income was reinforced, and pensioners were granted tax relief in 2009 in the form of a higher basic deduction. Of pension-qualifying income under the income ceiling, about 94 percent consists of earnings. With the introduction of the tax credit, the pension level decreases by about 2.8 percent, provided the difference in taxation for different types of income is taken into account.

The Orange Envelope provides pension projections each year for every individual insured based on that individual's actual pension credit earned. When the envelope is sent out in February/March, the latest data available are for income reported two years earlier. Thus, the envelope posted in 2010 was based on all incomes of the individual through 2008. In the projection, consideration is given to balancing in 2010, but not to balancing in subsequent years. The projection is prepared for growth rates of 0 and 2 percent for coming years.

In calculating the compensation rate on the basis of these projections, the pension projection of each individual at age 65 in the zero-growth alternative, excluding any guaranteed pension, has been divided by the pension-qualifying income of the same individual in 2008.[20] An average for each birth cohort from 1950 to 1981 has then been calculated by summation of all compensation rates and division of the sum by the number of individuals in the birth cohort.

[20] For individuals with no income this year, no compensation rate can be determined, and they are excluded from the calculation. Individuals with a compensation rate above 150 percent have also been excluded, as such high compensation rates are normally due to an income so low that it is normally temporary.

Compensation Rates in the Orange Envelope – National Pension at Age 65 as a Percentage of Final Pension Qualifying Income. Guaranteed Pension Not Included

Percent

- ▮ 75th percentile
- ○ Mean
- — 50th percentile (median)
- ▮ 25th percentile

Year of birth
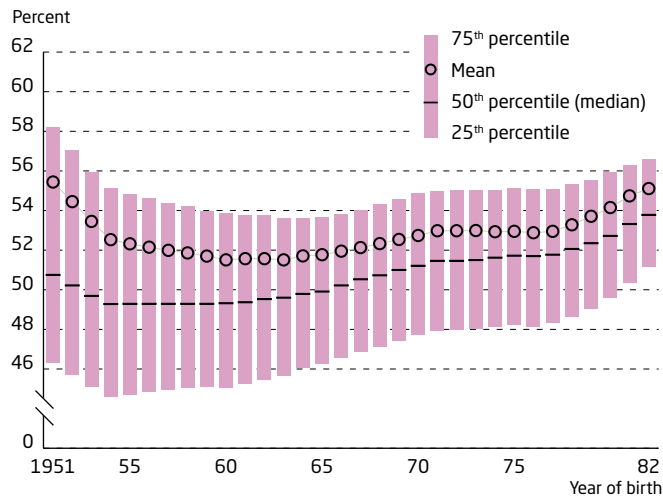
Source: 3,535,094 individual projections in the Orange Envelope for 2010

Both the assumptions underlying this calculation and the method applied differ in important respects from those in the calculation of pension levels in the table on page 34 and in the three bar graphs. In the calculation of the pension level, the comparison income is the average income below the ceiling on pension credit for persons aged 16–64 in the respective year. In the diagram above, the comparison income is below the ceiling in 2008 for each individual – corresponding to projected final earnings since it is assumed that there will be no real growth in earnings. For young individuals, who have earned few years of pension credit, this means that the compensation rate has been calculated with a virtually straight-line earnings profile. For individuals relatively close to retirement age, the pension has been calculated on the basis of their actual incomes – this means that on average the profile will be concave.

The high compensation rates for the oldest birth cohorts are explainable partly by the fact that their own incomes, which are taken here as comparison incomes, have begun to decrease. As a consequence, the compensation rate is higher with the method used here. An additional explanation is that for birth cohorts 1951–1953, a portion of their pensions – 15, 10, and 5 percent, respectively – are calculated according to the provisions of the ATP, which on average are more favourable. The reason why the variation in compensation rates decreases with the descending age of birth cohorts is that the calculation becomes more fictitious and straight-line the younger the birth cohort. The slightly rising compensation rates beginning with the birth cohorts of the mid-1950's reflect the increasing importance of the premium pension for these birth cohorts. Assuming an excess return of 3.5 percent, and that life expectancy will increase at a lower rate, there will be a slight upturn in the (median) replacement rate beginning with birth cohort 1955.

Guaranteed Pension and Its Coverage

In more ways than via balancing alone, the guaranteed pension and the inkomstpension function to some extent like communicating vessels. For an unmarried individual, the guaranteed pension is reduced to zero with an inkomstpension of SEK 131,500. The importance of the guaranteed pension decreases with the number of years of gainful employment.

For a man born in 1980, with an average earned income[21] for men, and with zero real growth in earnings, 38 years of work are required to earn an inkomstpension high enough to reduce the guaranteed pension to zero. A woman born in the same year, with an average earned income for women and with zero real growth in earnings, will not earn an equally high inkomstpension until after 40 years.

With annual growth in real earnings of 1.8 per cent as in the base scenario, the number of years of work required to exceed the limit for the guaranteed pension decreases. For unmarried persons born in 1980, the number of years required is 20 for men and 24 for women. In the last 15 years growth in real earnings has averaged just over 2 percent.

[21] This is roughly equivalent to SEK 347,000 for men and SEK 288,000 for women in age interval 25–34. Data taken from Survey of Household Finances (Hushållens ekonomi – HEK 2007), Statistics Sweden, for fully employed persons, increased by the growth in hourly earnings until 2009.

Pension Liability to the Economically Active

The inkomstpension liability to the economically active consists of the sum of each birth cohort's pension balances as of December 31, 2009, with the addition of total estimated pension credit for 2009. For further information, see Note 14, Table A, and Appendix B, Section 4.

The ATP liability to the economically active is calculated with the pension model of the Swedish Pensions Agency. The ATP of each birth cohort is calculated in the year when the cohort reaches age 65. The estimated annual pension is multiplied by the economic annuity divisor for the birth cohort, and the present value of the product is determined. For further information, see Note 14, Table B, and Appendix B, Section 4.

The premium pension liability to the economically active consists of the aggregate fund assets of the respective birth cohorts as of December 31, 2009.

Pension Disbursements
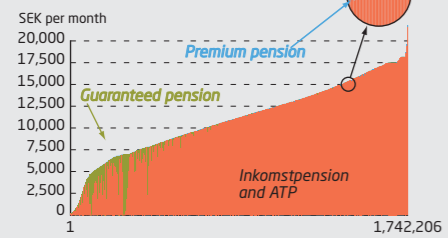
In the diagram, disbursements of the national pension in December, 2009, for pensioners born in 1944 or earlier are presented in order of size (1,742,206 disbursements).

About 42 percent of the pensioners receive some guaranteed pension. In total, the guaranteed pension represents roughly 7 percent of pension disbursements.

Pension Credit Earned

Data on income and pension credit are taken from the Swedish Social Insurance Agency´s records of earnings and refer to average amounts for all insured persons with positive pension credit earned in 2008. For the total pension credit earned in 2008, see the respective income statements and balance sheets for the inkomstpension and the premium pension.

Income refers to income from employment and other earned income, as well as transfer payments. Income is shown before deduction of the general pension contribution and for persons with incomes exceeding the threshold for pension credit (42.3 percent of one price-related base amount).

Total Pension Liability as of December 31, 2009

Billions of SEK

Premium pension, economically active
ATP, economically active
Inkomstpension, economically active

Premium pension, retirees
ATP, retirees
Inkomstpension, retirees

Year of birth

Economically active   Retirees

Average Pension Credit Earned and Pension Disbursed

SEK

Pension credit, premium pension
Pension credit, ATP
Pension credit, inkomstpension
Pension-qualifying amounts
Pension-qualifying income

Earned income

Disbursements, premium pension
Disbursements, guaranteed pension
Disbursements, ATP
Disbursements, inkomstpension

Year of birth

Economically active   Retirees

Pension Liability to Retirees

The pension liability to retirees is calculated in the same way for the ATP and the inkomstpension. The sum of pension disbursements to each birth cohort in December 2009 is multiplied by 12, and that annual amount is multiplied by a three-year average of the economic annuity divisor. For further information, see Note 14, Table C, and Appendix B, Section 4.

The premium pension liability to retirees is estimated from aggregate pension disbursements to the respective birth cohorts in December 2009, multiplied by 12 and by annuity divisors for the premium pension.

Earned Income
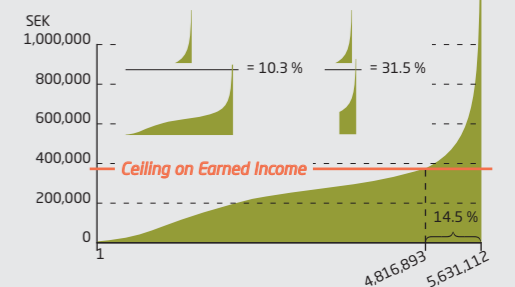
The national pension is based on earned income up to a ceiling of 8.07 income-related base amounts. In the diagram earnings in 2008 are presented in order of size.

Pension Disbursements

Data on pension disbursements are taken from the Swedish Social Insurance Agency´s records of disbursements and refer to average amounts for all retirees receiving a pension disbursement in 2009. For total disbursements of the inkomstpension and the premium pension, see Note 2.

Pension Liability to Persons Aged 17-65
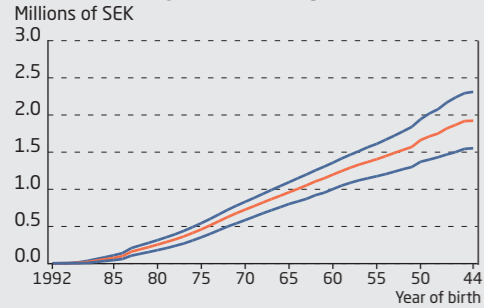
Millions of SEK

Year of birth

The red curve represents the median, which is the central value in the scale of values arranged from lowest to highest. The other curves indicate the values for the 25th and 75th percentiles; i.e. the upper curve represents the value of the pension asset* exceeded by 25 percent of the insured, and the lower curve represents the value of the pension asset not reached by 25 percent of the insured.

The median pension asset for a woman aged 44 with pension credit is approximately SEK 961,000. At that age, about 25 percent have a pension asset above SEK 1,096,000, and 25 percent have a pension asset below SEK 803,000.

* The pension balances of individuals equal the pension liability of the system.

Pension Qualifying Amounts

Percent of pension base

Year of birth
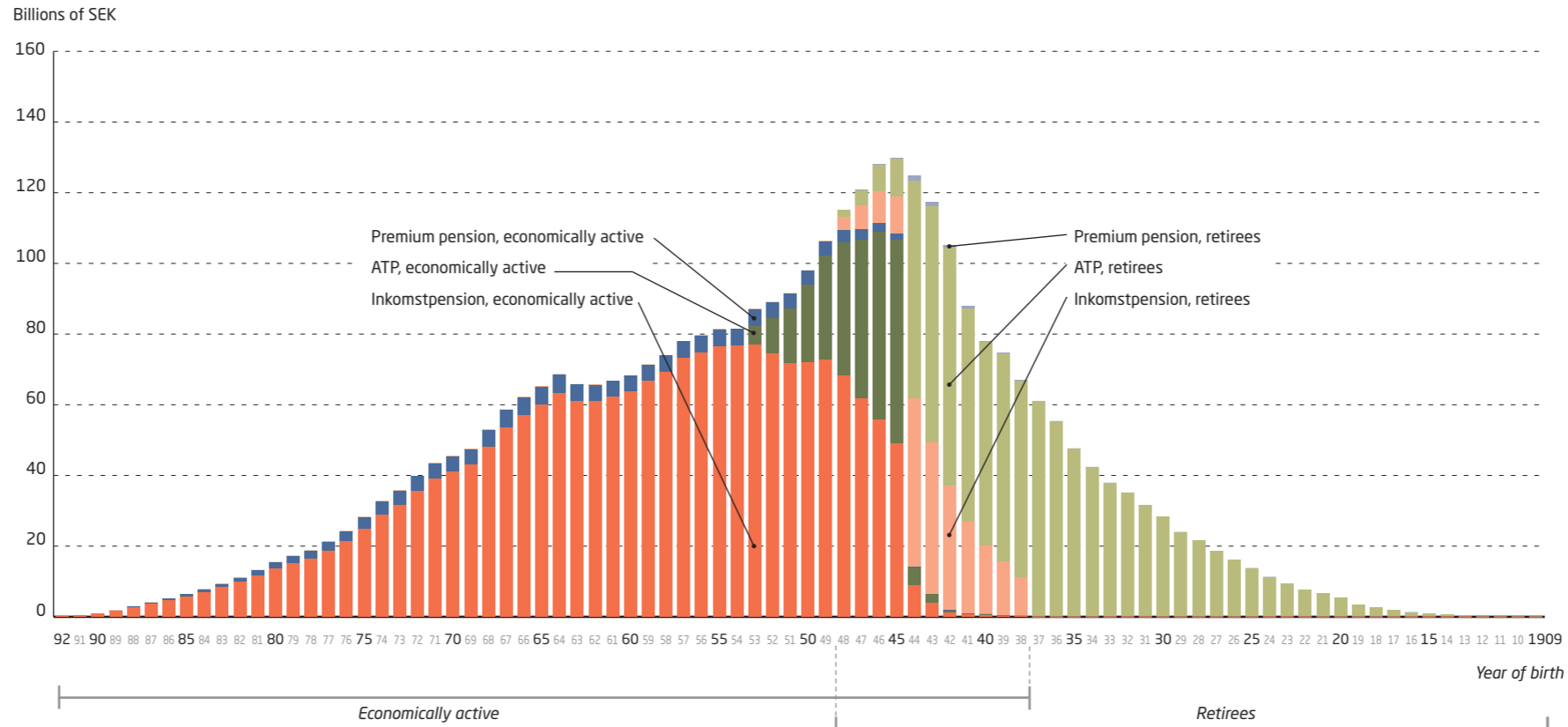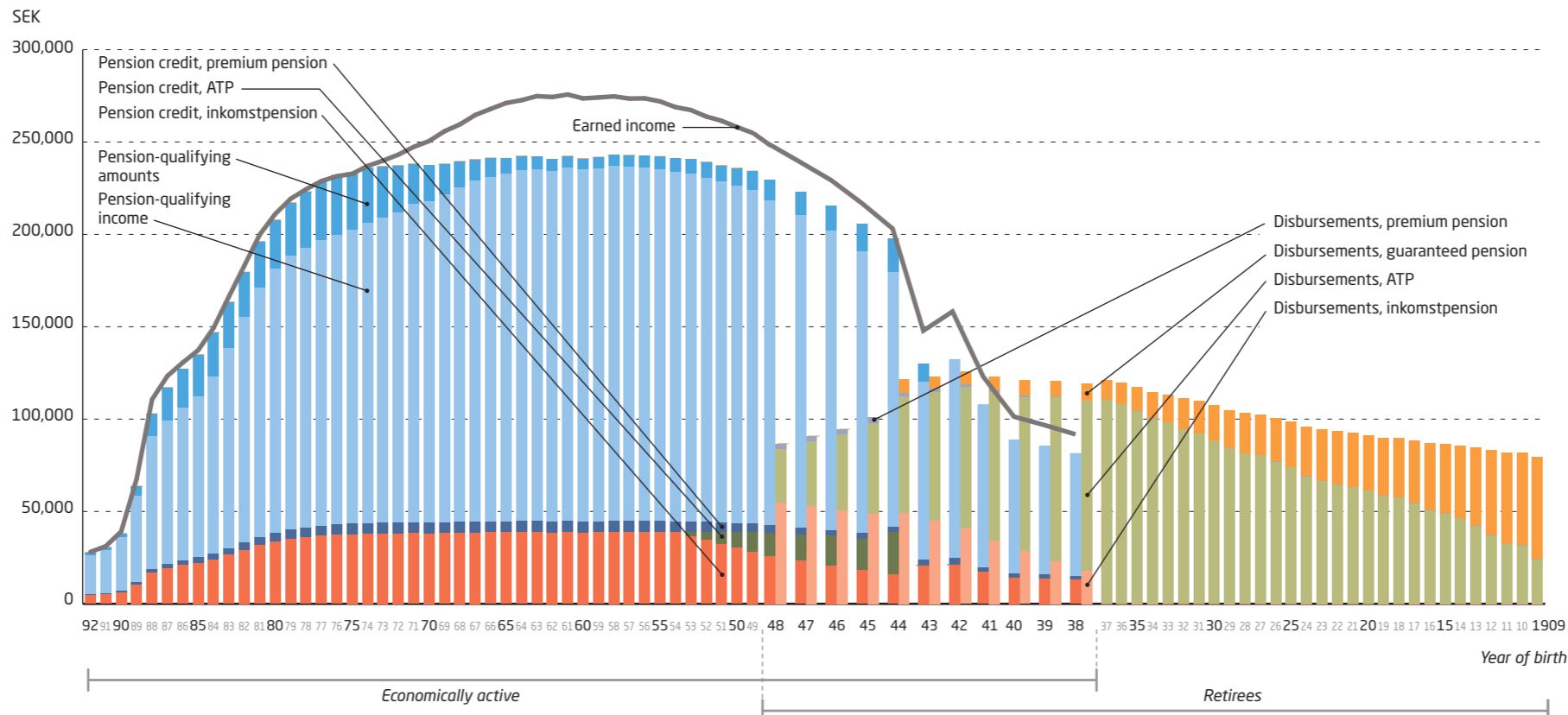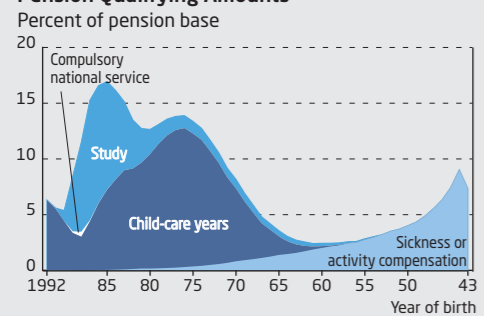
Pension credit is granted for pension-qualifying amounts in particular phases of individuals' lives, such as years with small children or of compulsory national service. In pay-in year 2008, pension-qualifying amounts constituted 7.1 percent of the pension base for women. The largest portion of this share, 3.9 percent, consisted of amounts for years with small children.

Total Pension Liability as of December 31, 2009, Women

Billions of SEK

Premium pension, economically active
ATP, economically active
Inkomstpension, economically active

Premium pension, retirees
ATP, retirees
Inkomstpension, retirees

Year of birth

Economically active — Retirees

Average Pension Credit Earned and Pension Disbursed, Women

SEK

Pension credit, premium pension
Pension credit, ATP
Pension credit, inkomstpension
Pension-qualifying amounts
Pension-qualifying income

Earned income

Disbursements, premium pension
Disbursements, guaranteed pension
Disbursements, ATP
Disbursements, inkomstpension

Year of birth

Economically active — Retirees

Pension Liability to Persons Aged 66 and Above

Millions of SEK

Year of birth

For 25 percent of retired women, the pension asset exceeds SEK 2,258,000 at age 66. The median at that age is SEK 1,870,000, and for 25 percent the pension asset is less than SEK 1,475,000. For a pensioner 76 years of age, the corresponding amounts decrease to SEK 1,405,000, 1,079,000 and 742,000.

Earned Income

SEK

= 4.9 %   = 25.9 %

Ceiling on Earned Income

7.6 %

2,559,446
2,769,963

The national pension is based on earned income up to a ceiling of 8.07 income-related base amounts. In the diagram women's earnings in 2008 are presented in order of size.

Pension Disbursements

SEK per month

Premium pension
Guaranteed pension
Inkomstpension and ATP
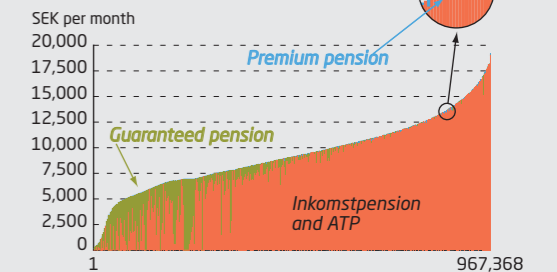
1   967,368

In the diagram, disbursements of the national pension in December, 2009, for female pensioners born in 1944 or earlier are presented in order of size (967,368 disbursements).
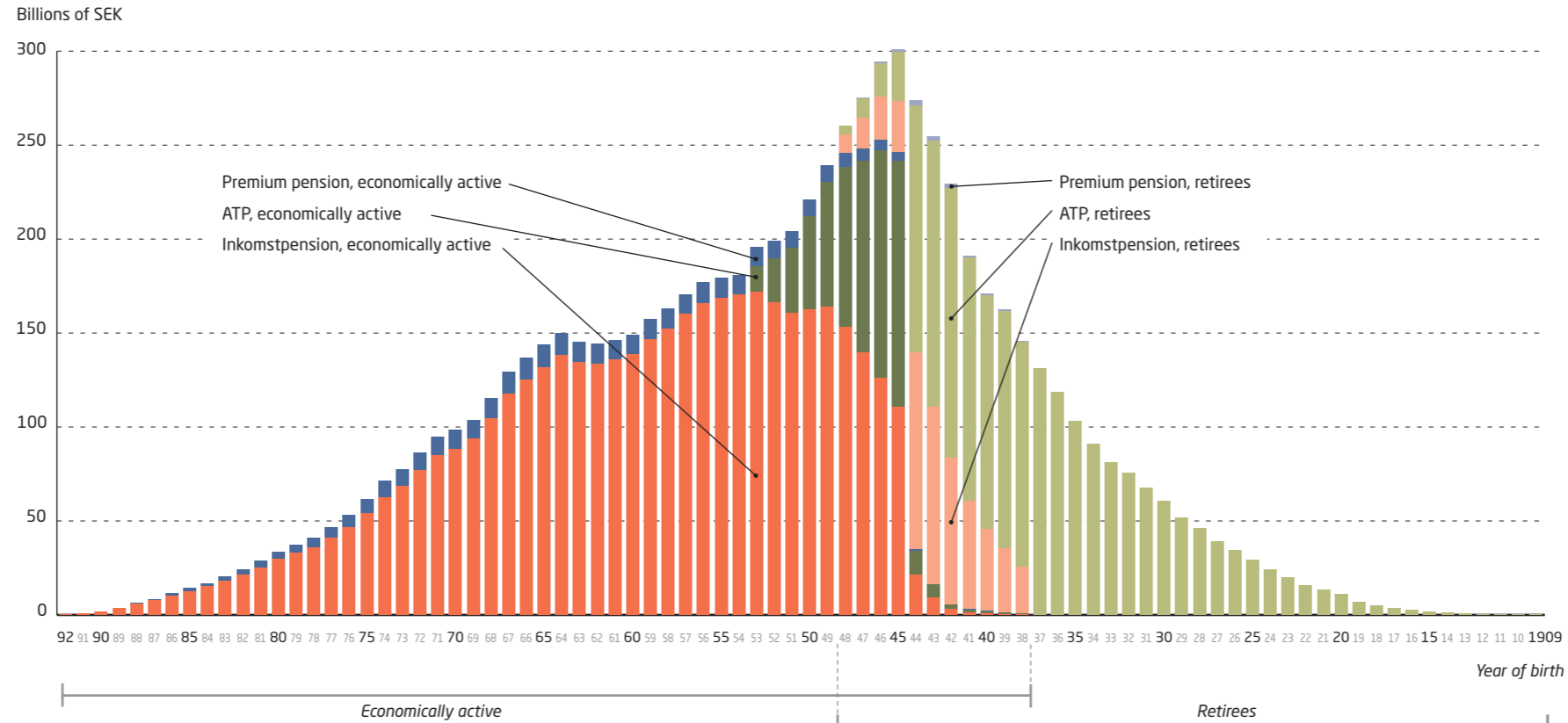
About 63 percent of female pensioners receive some guaranteed pension. In total, the guaranteed pension represents roughly 14 percent of pension disbursements to female retirees.
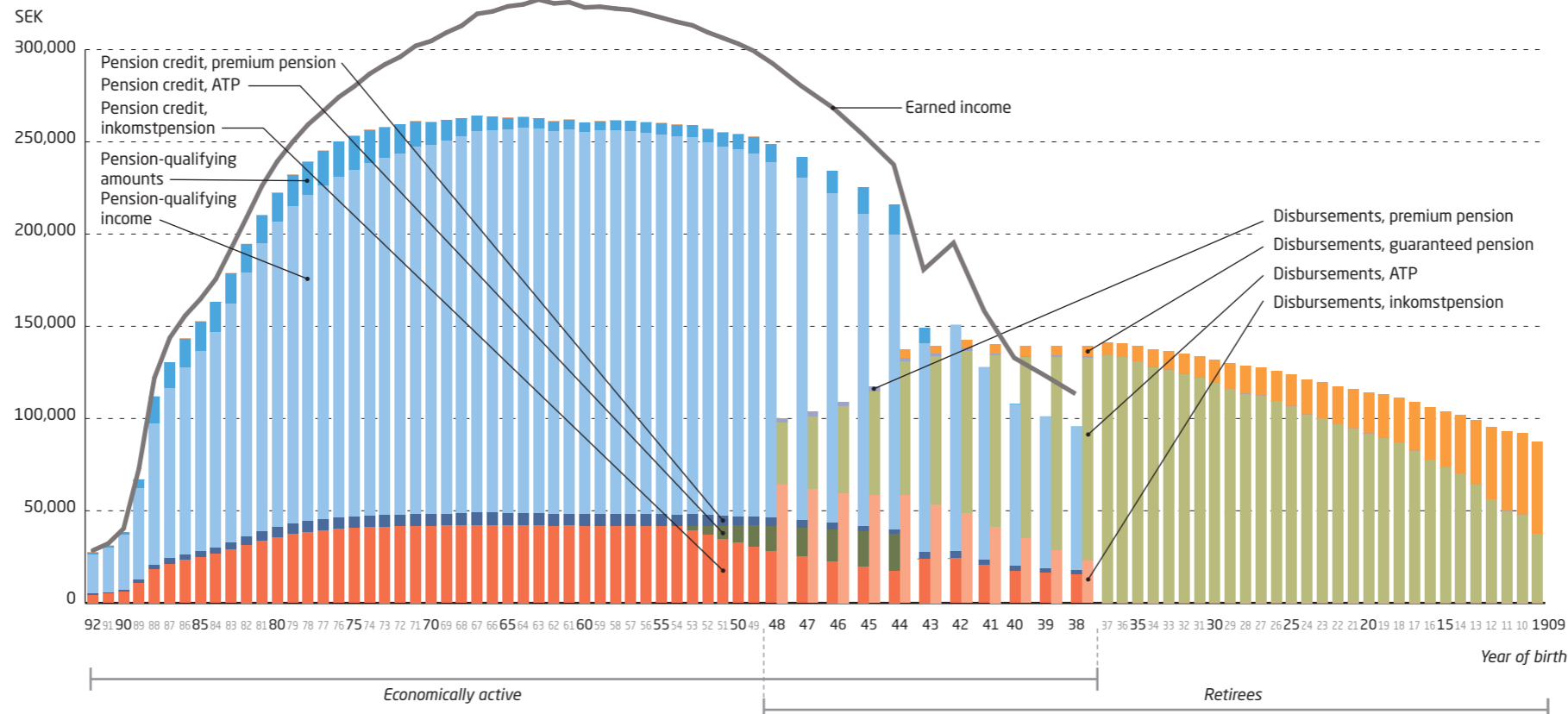
The widow's pension is not included in the diagram. Had it been included, pensions would have been substantially higher, particularly the lowest ones.

Pension Liability to Persons Aged 17–65
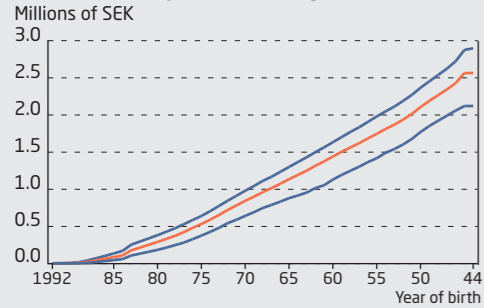
Millions of SEK

Year of birth

The red curve represents the median, which is the central value in the scale of values arranged from lowest to highest. The other curves indicate the values for the 25th and 75th percentiles; i.e. the upper curve represents the value of the pension asset* exceeded by 25 percent of the insured, and the lower curve represents the value of the pension asset not reached by 25 percent of the insured.

The median pension asset for a man aged 44 with pension credit is approximately SEK 1,136,000. At that age, about 25 percent have a pension asset above SEK 1,301,000, and 25 percent have a pension asset below SEK 881,000.

* The pension balances of individuals equal the pension liability of the system.

Pension Qualifying Amounts

Percent of pension base

Compulsory national service

Study

Child-care years

Sickness or activity compensation

Year of birth
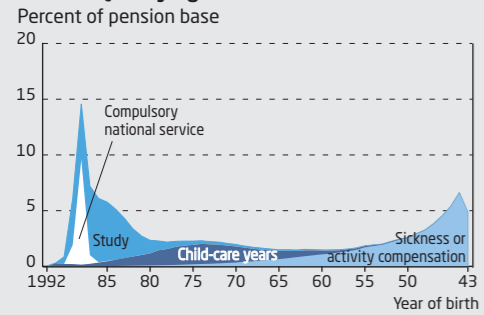
Pension credit is granted for pension-qualifying amounts in particular phases of individuals' lives, such as years with small children or of compulsory national service. In pay-in year 2008, pension-qualifying amounts constituted 2.6 percent of the pension base for men. The largest portion of this share, 1.2 percent, consisted of amounts for sickness or activity compensation.

Total Pension Liability as of December 31, 2009, Men

Billions of SEK

Premium pension, economically active
ATP, economically active
Inkomstpension, economically active

Premium pension, retirees
ATP, retirees
Inkomstpension, retirees

Year of birth

Economically active

Retirees

Average Pension Credit Earned and Pension Disbursed, Men

SEK

Pension-qualifying amounts
Pension-qualifying income

Earned income

Pension credit, premium pension
Pension credit, ATP
Pension credit, inkomstpension

Disbursements, premium pension
Disbursements, guaranteed pension
Disbursements, ATP
Disbursements, inkomstpension

Year of birth

Economically active

Retirees

Pension Liability to Persons Aged 66 and Above

Millions of SEK

Year of birth

For 25 percent of retired men, the pension asset exceeds SEK 2,862,000 at age 66. The median at that age is SEK 2,533,000, and for 25 percent the pension asset is less than SEK 2,110,000. For a pensioner 76 years of age, the corresponding amounts decrease to SEK 1,991,000, 1,674,000 and 1,421,000.

Earned Income
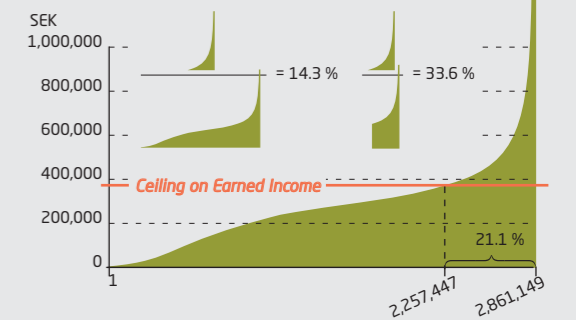
SEK

= 14.3 %   = 33.6 %

Ceiling on Earned Income
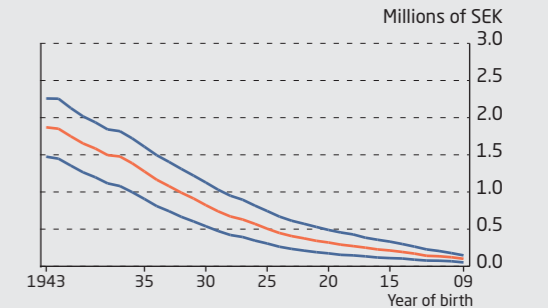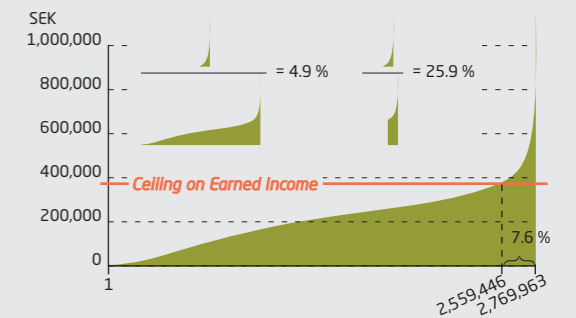
21.1 %

2,257,447   2,861,149

The national pension is based on earned income up to a ceiling of 8.07 income-related base amounts. In the diagram men's earnings in 2008 are presented in order of size.

Pension Disbursements

SEK per month

Premium pension
Guaranteed pension
Inkomstpension and ATP
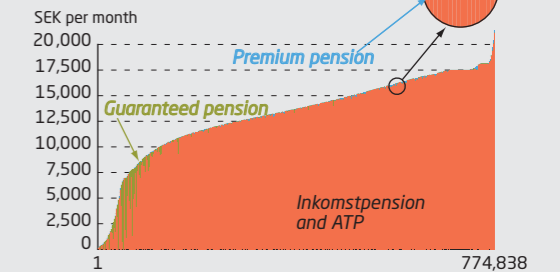
1   774,838

In the diagram, disbursements of the national pension in December, 2009, for male pensioners born in 1944 or earlier are presented in order of size (774,838 disbursements).

About 17 percent of male pensioners receive some guaranteed pension. In total, the guaranteed pension represents roughly 2 percent of pension disbursements to male retirees.

Your pension accounts

Changes in your accounts in 2009, SEK	Inkomstpension	Premium pension
Balance, December 31, 2008	690,665	37,847
Pension credit recorded for 2008	+ 30,966	+ 5,026
Inheritance gain	+ 2,160	+ 106
Charge for administrative costs	– 130	– 73
Change in value	– 9,655	+ 13,068
Balance, December 31, 2009 **	689,403	55,730 *

* Includes change in value of funds and interest on pension credit for 2008.

** The difference between the closing balance and the total above is due partly to changes in tax assessment and to the fact that some individuals have drawn a pension during the year.

Your national pension balance

Total balance of your accounts: SEK 745,133

The Orange Envelope of Mr./Ms. Average Svensson

Från den 1 januari 2010

tar Pensionsmyndigheten över all
hantering av pensioner från Försäkringskassan
och Premiepensionsmyndigheten, PPM

www.pensionsmyndigheten.se
Kundservice 0771-776 776

Returadress: 105 85 Stockholm

All pension accounts

Changes during 2009, SEK *	Inkomstpension	Premium pension
Balance, December 31, 2008	4,166,149,000,000	233,333,000,000
Pension credit recorded for 2008	+ 186,791,000,000	+ 30,987,000,000
Inheritance gain	+ 13,029,000,000	+ 655,000,000
Charge for administrative costs	– 786,000,000	– 447,000,000
Change in value	– 58,238,000,000	+ 80,565,000,000
Balance, December 31, 2009 ***	4,158,534,000,000	343,583,000,000 **

*   Rounded off to the nearest million.
**   Includes change in value of funds and interest on pension credit for 2008.
*** The difference between the closing balance and the total above is due partly to changes in tax assessment and to the fact that some individuals have drawn a pension during the year.

Our national pension

Total of all orange envelopes: SEK 4,502,117,000,000

Total of All Envelopes

Från den 1 januari 2010

tar Pensionsmyndigheten över all
hantering av pensioner från Försäkringskassan
och Premiepensionsmyndigheten, PPM

www.pensionsmyndigheten.se
Kundservice 0771-776 776

Returadress: 105 85 Stockholm

When read out loud, the total of all Orange Envelopes is as follows: four trillion, five hundred two billion, one hundred seventeen million Swedish kronor. The total amounts of the inkomstpension are found in Note 14, Table A, where the change in the pension liability to the economically active is reported. The corresponding amount for the premium pension is found in the income statement for the premium pension.

ORANGE REPORT 2009

in 7 Minutes

Despite substantial growth in the value of the National Pension Funds, the inkomstpension system reported a loss of SEK 79 billion. The aggregate deficit is now SEK 323 billion, or 4.3 percent of the pension liability. Because of the deficit, there will be further reduction of indexation through balancing. In the premium pension system the growth in value during 2009 was quite substantial at SEK 81 billion, or 34.7 percent.

This section provides a brief presentation of the development of the two parts of the national pension – the inkomstpension and the premium pension – in 2009.

Inkomstpension

The inkomstpension system is a pay-as-you-go system. Pension contributions received are used to pay the pension disbursements of the same year. Surpluses or deficits arising from differences between pension contributions received and pensions disbursed 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: paid-in pension contributions are multiplied by the average time that one Swedish krona is expected to remain in the pension system, or the turnover duration of the system.

The pension liability consists partly of the liability to the economically active and partly of the liability to retirees. The pension liability to the economically active is the total of the bottom lines in the pension account statements in all Orange Envelopes. The pension liability to retirees is the sum of the expected pension disbursements to today's retirees for the rest of their lives. The pension liability changes primarily through annual indexation of pensions and the balances of pension accounts. 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 is affected by numerous macroeconomic and demographic factors. Normally the principal factor in the short run is growth in employment, but the effects

of stock and bond markets on the buffer fund is also significant, particularly in case of major changes. In the long run, demographic factors matter most.

The balance ratio is a measure of the financial position of the system and is calculated as system assets divided by the pension liability. If the balance ratio is less than 1.0000, that is, if the liabilities of the pension system exceed its assets, so-called balancing is activated to restore long-run balance in 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. The rate of indexation remains lower until the system has regained financial balance. Any surpluses arising after balancing has been activated are used directly to increase indexation to the extent possible and thus to restore the value of pensions.

Change in Assets in 2009. In 2009 the buffer fund, that is, the First–Fourth and Sixth National Pension Funds, increased by SEK 120 billion, or 17.0 percent. The positive return of the buffer fund was SEK 136 billion, or 19.3 percent. As forecast, 2009 became the first year since 1999 when the expenditure of the funds – pension disbursements and costs of administration – exceeded the pension contributions paid into the inkomstpension system. The result was a negative contribution of SEK 16 billion.

For the first time, the contribution asset decreased – the change was minus SEK 115 billion, or 1.8 percent. The

decrease was due both to lower contribution revenue and to a decreasing CPI in 2009. Another factor reducing the contribution asset was a decrease in turnover duration. However, the total assets of the inkomstpension still rose by SEK 5 billion, or 0.1 percent, thanks to strong growth of the National Pension Funds.

Change in the Pension Liability in 2009. The pension liability rose by SEK 84 billion, or 1.1 percent. Of this increase, indexation accounted for SEK 64 billion, or 0.9 percentage points. The liability to retirees is affected by the change in the average life span. Compared to 2008, the average pay-out duration (economic life expectancy) of a 65-year-old has increased by 40 days. The longer expected pay-out duration increased the pension liability by SEK 23 billion. The year's pension disbursements exceeded new pension credit and ATP points, including certain adjustments, reducing the pension liability by SEK 4 billion.

Result for 2009. The net result of the inkomstpension system for the year was SEK –79 billion. The capital deficit in the pension system of SEK 243 billion from 2008 grew during the year to a deficit of SEK 323 billion. The negative result for the year is explained primarily by the decrease in the contribution asset.

Financial Position as of December 31, 2009. As of December 31, 2009, assets were 4.3 percent less than the pension liability. The balance ratio of the system for 2010 is thus 0.9549.

Eight-Year Review
Billions of SEK

	2009	2008	2007	2006	2005	2004	2003	2002
Buffer fund, mean value	811	821						
Buffer fund	827	707	898	858	769	646	577	488
Contribution asset	6,362	6,477	6,116	5,945	5,712	5,607	5,465	5,301
Total assets	7,189	7,184	7,014	6,803	6,490	6,253	6,042	5,789
Pension liability	7,512	7,428	6,996	6,703	6,461	6,244	5,984	5,729
Results brought forward	–323	–243	18	100	28	9	58	60
Balance ratio	0.9549	0.9826	1.0026	1.0149	1.0044	1.0014	1.0097	1.0105
Financial position*	0.9570	0.9672						

* The balance ratio according to the previous definition (through 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.

For the first time, the balance ratio was calculated in 2008 at less than 1.0000. In 2009 as well, the balance ratio, which is calculated on the basis of the system's financial position as of December 31, 2009 and affects indexation at the end of 2010, was calculated at less than 1.0000. This balance ratio is 0.9549 and will reduce indexation by 4.5 percent.

The sensitivity analysis in the table shows the effect on the balance ratio if one base is changed while all other bases are assumed to remain the same.

How Is the Balance Ratio Affected by Changes in the Bases for Its Calculation?

Type of base	Change in base	Change in balance ratio
Contribution base	+1 %	+0.6 %
Return on fund	+10 percentage points	+0.4 %
Retirement age	+1 year	+2 %
Age for entering labour market	-1 year	+4 %

Premium Pension

The premium pension system is a funded system where pension savers themselves choose the funds in which their premium pension moneys will be invested. The premium pension is disbursed from the proceeds of selling off accumulated capital. The assets of the system consist of investments by pension savers in funds. With fund insurance, the pension liability to the economically active and to retirees is linked primarily to the value of fund shares. Changes in the value of fund shares result in direct and equal changes in the system assets of pension savers. With conventional insurance, the pension liability is the value of the remaining guaranteed disbursements. That value is calculated on assumptions about future return, life expectancy and operating expenses. In the premium pension system, all payments into and out of the system and all changes in value have the same effect, in principle, on the assets and liabilities of the system. Consequently, the system's result each year should in principle be SEK zero. The main reason why the result deviates from this principle is the element of conventional life insurance.

The pension credit earned by pension savers is invested in December following the year in which it is earned. The fund holdings of pensioners are increased by the new pension credit before the annual recalculation of pensions to be disbursed, with a consequent effect on pension disbursements for coming years.

Change in Assets in 2009. Premium pension assets increased during the year by SEK 110 billion. The increase consists of SEK 30 billion in new pension credit, SEK 81 billion in increased value of funded capital, and SEK −1 billion in pension disbursements. The rate of return during the year was 34.7 percent. The capital-weighted annual return of the premium pension system has averaged 3.2 percent since the system received its first contribution revenue in 1995.

Change in the Pension Liability in 2009. The pension liability increased by SEK 110 billion in 2009. The change in the pension liability is based in principle on the same newly earned pension credit, positive change in value, and pension disbursements as mentioned above.

Result for 2009. The result for the year was SEK 547 million. In addition to a positive result of SEK 106 million from fund operations, the result was affected by SEK 436 million from conventional insurance, SEK 39 million from trade in fund shares via trade inventory, and by net interest of SEK −34 million. The principal explanation for the year's sizable positive result in conventional insurance is the development of the stock market.

Seven-Year Review
Millions of SEK

	2009	2008	2007	2006	2005	2004	2003
Fund insurance	341,371	231,600	309,423	268,708	192,770	125,024	94,124
Conventional insurance	2,212	1,733	1,288	739	307	94	31
Total insurance assets	343,583	233,333	310,711	269,447	193,077	125,118	94,155
Pension liability	342,914	233,082	310,326	269,447	193,077	125,120	94,157
Result for the year	547	-100	318	56	57	48	-109

The value of pension savers' premium pension assets as of December 31, 2009, was SEK 343,583 million. The increase in value during 2009 was 34.7 percent.

The Income-Related Old-Age Pension System, Income Statement and Balance Sheet

For references to notes, see the respective income statements and balance sheets of the inkomstpension and premium pension systems.

Inkomstpension and premium pension
Income Statement, millions of SEK

Change in fund assets	2009	2008	Change
Pension contributions	233,699	233,258	441
Pension disbursements	–218,242	–200,014	–18,228
Return on funded capital	217,413	–300,253	517,666
Administrative costs	–2,066	–1,820	–246
Total	230,804	–268,829	499,633
Change in contribution asset			
Value of change in contribution revenue	–114,919	394,833	–509,752
Value of change in turnover duration	–507	–33,452	32,945
Total	–115,426	361,381	–476,807
Change in pension liability*			
New pension credit and ATP points	–244,497	–247,798	3,301
Pension disbursements	218,223	199,990	18,233
Indexation/change in value	–144,453	–279,161	134,708
Value of change in life expectancy	–23,054	–27,044	3,990
Inheritance gains arising	12,072	11,319	753
Inheritance gains distributed	–13,684	–12,664	–1,020
Deduction for administrative costs	1,233	1,379	-146
Total	–194,160	–353,979	159,819
Net income/-loss for the year	–78,782	–261,427	182,645

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

Balance Sheet, millions of SEK

Assets	12/31 2009	12/31 2008	Change
Fund assets	827,069	707,087	119,982
Insurance assets	343,583	233,333	110,250
Other assets	29,690	29,462	228
Contribution asset	6,361,925	6,477,351	–115,426
Total assets	7,562,267	7,447,233	115,034
Liabilities and results brought forward			
Opening results brought forward	–244,673 *	16,782	–261,455
Net income/-loss for the year	–78,782	–261,427	182,645
Closing results brought forward	–323,455	–244,645	–78,810
Pension liability	7,854,606	7,660,889	193,717
Other liabilities	31,116	30,989	127
Total liabilities and results brought forward	7,562,267	7,447,233	115,034

* Opening results brought forward differs from Closing results brought forward last year, see Note 24.

Inkomstpension, Income Statement and Balance Sheet
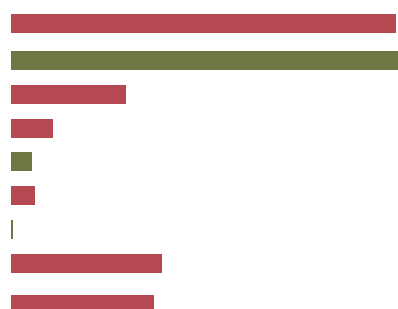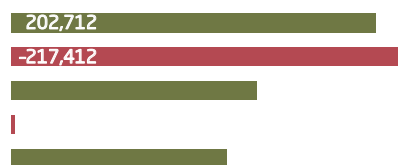
Income Statement, millions of SEK

Change in fund assets	Note	2009	2008	Change
Pension contributions	1	202,712	203,140	-428
Pension disbursements	2	-217,412	-199,206	-18,206
Return on funded capital	3	136,412	-193,931	330,343
Administrative costs	4	-1,730	-1,388	-342
Total		119,982	-191,385	311,367
Change in contribution asset				
Value of change in contribution revenue	5	-114,919	394,833	-509,752
Value of change in turnover duration	6	-507	-33,452	32,945
Total		-115,426	361,381	-476,807
Change in pension liability*				
New pension credit and ATP points	7	-213,510	-217,680	4,170
Pension disbursements	2	217,393	199,182	18,211
Indexation	8	-63,888	-385,378	321,490
Value of change in life expectancy	9	-23,054	-27,044	3,990
Inheritance gains arising	10	11,417	10,656	761
Inheritance gains distributed	10	-13,029	-12,001	-1,028
Deduction for administrative costs	11	786	942	-156
Total		-83,885	-431,323	-347,438
Net income/-loss for the year		-79,329	-261,327	181,998

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

Balance Sheet, millions of SEK

Assets	Note	12/31 2009	12/31 2008	Change
Fund assets	12	827,069	707,087	119,982
Contribution asset	13	6,361,925	6,477,351	-115,426
Total assets		7,188,994	7,184,438	4,556
Liabilities and results brought forward				
Opening results brought forward		-243,369	17,958	-261,327
Net income/-loss for the year		-79,329	-261,327	181,998
Closing results brought forward		-322,698	-243,369	-79,329
Pension liability	14	7,511,692	7,427,807	83,885
Total liabilities and results brought forward		7,188,994	7,184,438	4,556
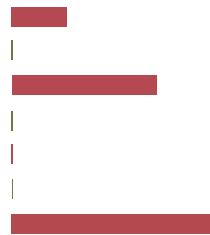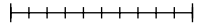
SEK 100 billion

202,712
-217,412

SEK 1000 billion

Premium Pension, Income Statement and Balance Sheet

Income Statement, millions of SEK

Change in fund assets	Note	2009	2008	Change
Pension contributions	1	30,987	30,118	869
Pension disbursements	15	-830	-808	-22
Return on funded capital	16	81,001	-106,322	187,323
Administrative costs	17	-336	-432	96
Total		110,822	-77,444	188,266
Change in pension liability *				
New pension credit	18	-30,987	-30,118	-869
Pension disbursements	15	830	808	22
Change in value	19	-80,565	106,217	-186,782
Inheritance gains arising	20	655	663	-8
Inheritance gains distributed	20	-655	-663	8
Deduction for administrative costs	21	447	437	10
Total		-110,275	77,344	-187,619
Net income/-loss for the year		547	-100	647

* A negative item (–) increases the pension liability, and a positive item ( ) decreases it, by the amount shown.
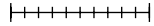
Balance Sheet, millions of SEK

Assets	Note	12/31 2009	12/31 2008	Change
Insurance assets	22	343,583	233,333	110,250
Other assets	23	29,690	29,462	228
Total assets		373,273	262,795	110,478
Liabilities and results brought forward				
Opening results brought forward	24	-1,304	-1,176	-128
Net income/-loss for the year		547	-100	647
Closing results brought forward	24	-757	-1,276	519
Pension liability	25	342,914	233,082	109,832
Other liabilities	26	31,116	30,989	127
Total liabilities		374,030	264,071	109,959
Total liabilities and results brought forward		373,273	262,795	110,478

SEK 100 billion

SEK 1000 billion

Accounting Principles

To a large degree, the assets and liabilities of the inkomstpension are valued solely on the basis of events and transactions that are verifiable at the time of valuation. The calculation of the so-called contribution asset follows principles developed especially for a primarily unfunded pension system.

Regulations and Guidelines

The Annual Report of the Pension System has been prepared in accordance with Chapter 15, § 20 of the Earnings Related Old Age Pension Act (1998:674).

The income-related old-age pension system includes the benefits provided by the inkomstpension, the ATP and the premium pension.[22]

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 the Earnings Related Old Age Pension Act (1998:674), 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 (2009:1247). These formulas are also found in Appendix B.

The premium pension system is a fully funded pension system where contributions are invested and the accumulated capital is sold off to pay pensions.

According to the Regulations for the Annual Report (2002:135), the Report is to include a projection of the assumed long-term development of the pension system. See the section "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 they 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 PPM 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.

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.

In the Annual Report of the 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. The buffer funds prepare their own reports according to the Law on National Pension Funds (2000:192). On the basis of current provisions for comparable financial companies, the funds have also developed common principles for accounting and valuation.

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

In the Annual Report of the Pension System, information on the premium pension has been presented for the most part in accordance with the annual report prepared by the Premium Pension Authority (PPM). The PPM Annual Report was prepared according to the Law (1995:1560) on Annual Reports of Insurance Companies and according to the regulations and general guidelines of the Swedish Financial Supervisory Authority on annual reports of insurance companies. Certain items have been adjusted, simplified or combined in order to make the presentation more comparable with that of the inkomstpension.

Principles for Valuation of Assets and Liabilities

In general, the assets and liabilities of the inkomstpension system are valued only on the basis of events and transactions that are verifiable at the time of valuation. For example, the assumption that contribution revenue normally changes at the rate of economic growth is not considered in the calculation of the contribution asset. Nor does the valuation of the pension liability take into account the assumption that pension disbursements, because of factors like indexation, will change in the future. The reason why assets and liabilities are valued without regard to future factors is that the financial position of the system is determined exclusively by the relationship of assets to liabilities, that is, the so-called balance ratio.

In the design of the inkomstpension, there is a strong link between the development of system assets and the development of system liabilities, although in cases where the balance ratio exceeds one (1.0000), assets and liabilities will develop at slightly different rates over time. When the balance ratio is less than one (1.000), the provisions for balancing establish in principle an absolute link between the respective rates of change in liabilities and assets.[23]

In the valuation of the assets and liabilities of the inkomstpension system, it is assumed that these will change at the same rate after each valuation. To put it another way, it is assumed in the method of valuation that the future internal rate of return of the system will be the same as the future change in the pension liability, even though this outcome is certain only if balancing has been activated. When balancing has not been 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 of 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 these are reflected in the events and transactions on which the accounts are 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, in addition to the rules of the pension system, are economic and demographic. The economic determinants are the average pension-qualifying income of each annual birth cohort and the sum of these incomes. The demographic determinants 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 for the accounting year by the turnover duration for the same year.[24] Turnover duration expresses the expected average length of

[23] In the method for calculating turnover duration, there is an implicit assumption that the size of the economically active population will remain constant. If the population decreases, there is thus a risk that the accounts will (slightly) overstate the system's assets in relation to its liabilities. It is reasonable, however, to assume that the population will cease declining at some point. If so, the underestimate, and the possible deficit in the buffer fund that may result, will be temporary. The buffer fund will in time return to a level of at least SEK zero.

[24] The method of calculating turnover duration is described in Equation 3, Appendix B.

time between the payment of a monetary unit of contribution into the system and the disbursement of the corresponding pension credit in the form of a pension. Thus, turnover duration reflects the difference in age between the average contributor and the average pensioner that would result if economic, demographic and legal conditions were constant.

To state that the valuation of the contribution inflow is derived through multiplication of the year's inflow by turnover duration is equivalent to holding that this value is based on a supposedly permanent inflow of contributions, with the inflow each year equal to the contributions of the preceding year, discounted at a rate equal to one (1) divided by turnover duration. If turnover duration goes up, the rate of discount decreases and the value of the contribution flow increases. If turnover duration goes down, the rate of discount increases and the value of the contribution flow decreases.

To limit variation in the balance ratio – that is, to reduce fluctuation in the annual result of the pension system – the contribution flow used 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 latter 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 of the past three years is calculated, then indexed by the annual percentage change in the contribution flow for the last three years, after eliminating the change in consumer prices during the same period. Thereafter, the change in consumer prices in the latest year is added back. Moreover, and also to reduce the variation in the balance ratio, the median turnover duration for the latest three years is used in calculating the contribution asset.

The assets of the National Pension Funds are assessed at their so-called true value. This means that assets are valued preferably at their latest price paid, if any, on the last trading day of the year, otherwise at the latest price bid. In order to reduce the variation, the mean value of the assets of the National Pension Funds for the latest three years has been used in calculating the balance ratio.

Valuation of Inkomstpension Liabilities

The inkomstpension liability to persons who have not yet 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.[25]

The pension liability to retirees is calculated through multiplication of pensions granted (annual amount) by the expected number of years for which the pension 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 less 1.6 percentage points. 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.[26] In economic annuity divisors, consideration is given to any correlation between size of pensions and pay-out period.

[25] See Note 14, Table A.

[26] See Formula 4.3 in Appendix B.

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 cohort. This amount is multiplied by the established annuity divisor of the accounting year for persons aged 65. The present value of this amount is then calculated through discounting it by the assumed annual change of two percent in the income index from the year when each birth cohort reaches age 65 until the year of the accounts. That amount is reduced by the similarly discounted value of each birth cohort's expected contribution inflow until its members reach 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 2008:26) 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 accrued acquisition cost, the difference between acquisition cost and redemption price is periodized as interest revenue for the time remaining to maturity.

Fund insurance assets consist of the investments of pension savers in funds and are valued at the redemption price for fund shares.

With fund insurance, the pension liability consists of fund insurance assets and of liquid assets not yet converted into fund shares.

With conventional insurance, holdings are invested in various assets and 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. The value is calculated on assumptions about future returns, life expectancy and operating expenses. The return represents a conservative estimate of the nominal return for the period covered by the insurance and is determined by the market rate of interest for liquid treasury bills and government bonds at the time of valuation. The market rate of interest is chosen on the basis of the time to maturity for guaranteed disbursements. The valuation of the liability by the market 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 they increase the guaranteed amount. Assumptions about life spans are based on the population forecast of Statistics Sweden from 2006. Beginning January 2010, life spans are based instead on the corresponding forecast from 2009. The cost of operations has been 0.1 percent since April 2007.

Notes and Comments

Notes 2–14 relate to the inkomstpension, Notes 15–26 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

Contributions to the National Pension

Contributions to:	Inkomstpension 2009	2008	Premium pension 2009	2008
Employer contributions on income up to ceiling	89,537	89,246	25,017	24,618
Contributions for the self-employed on income up to ceiling	2,501	3,041	697	841
General pension contribution	88,521	86,662	-	-
Central government old-age pension contribution	23,632	23,757	3,847	3,676
Final settlements etc.	−1,479	434	1,426	983
Total	202,712	203,140	30,987	30,118

As shown in the table above, there are several different types of contributions in the national pension system. Not all contribution revenue goes to the pension system; contributions for incomes above the so-called income ceiling of 8.07 income-related base amounts are transferred to the central government budget. These contributions, which are actually taxes, are not included in the table. Contributions to the old-age pension are paid by employers and self-employed persons, the general pension contribution by all economically active 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.

The contribution revenue of the pension system decreased slightly between 2008 and 2009, whereas the contribution revenue of the premium pension system increased. With the economy in a slump, the rise in employer contributions was negligible, and contributions for the self-employed dropped between the two years. The revenue from the general pension contribution was somewhat higher. The relative proportion between central government old-age pension contributions allocated to the premium pension system and to the inkomstpension system, respectively, changed between 2008 and 2009; this explains why the premium pension system received more revenue from these contributions whereas the inkomstpension system received less.

More Detailed Accounting for Pension Contributions

Table A shows pension contributions recorded in 2009. A portion of the contributions are for previous years. Employer contributions, for example, are recorded at least one month after payment of the corresponding wages and salaries.

The general pension contribution is allocated entirely to the National Pension Funds. For employer contributions and contributions for the self-employed, there is a preliminary allocation by set percentages among the National Pension Funds, the premium pension system and the central govern-

100 % = SEK 233,699 million

In the diagram final settlements etc. have been allocated between employer contributions and the central government old-age pension contribution.

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ment budget. The central government old-age pension contribution is preliminarily allocated by set percentages between the National Pension Funds and the premium pension system.

The share of the old-age pension contribution allocated to the central government budget is for the portion of income that exceeds the ceiling for 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.[27] Since these contributions do not represent pension credit, they are in fact taxes.

[27] The income-related base amount for 2009 was SEK 50,900. This base amount multiplied by 8.07 was SEK 410,763; multiplied by 7.5, it was SEK 381,750.

Table A   Pension Contributions by Type, 2009

Contributions to:	Inkomst-pension	Premium pension	Central govt. budget (tax)	Total	of which contrib. to national pension
Employer contributions	89,537	25,017	14,131	128,685	114,554
Contributions for the self-employed	2,501	697	394	3,592	3,198
General pension contribution	88,521	-	-	88,521	88,521
Central govt. old-age pension contribution	23,632	3,847	-	27,479	27,479
Total excluding settlements etc.*	204,191	29,561	14,525	248,277	233,752
Final settlements in 2009 for 2007	65	–740	675	0	–675
Collection loss, settlement	–325	-	-	–325	–325
Discrepancies between Swedish Social Insurance Agency accounting and accounting of National Pension Funds and PPM, respectively	–1,219	2,166	-	947	947
Total	202,712	30,987	15,200	248,899	233,699

*   Contributions received by the Swedish Social Insurance Agency in 2009 and transferred to the National Pension Funds, the premium pension system and the central government budget, respectively.

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. Thereafter, a settlement is made among the central government budget, the premium pension system and the National Pension Funds.

The discrepancy between the accounting of the Swedish Social Insurance Agency and that of the National Pension Funds (SEK –1,219 million) is due primarily to differences in regard to periodization. The explanation for the difference between the accounting of the Swedish Social Insurance Agency and that of the PPM (SEK 2,166 million) is that the accounts refer to different years. The accounts of the PPM refer to contribution revenue for pension credit earned in 2008, whereas the accounts of the Swedish Social Insurance Agency show contribution revenue received in 2009.

Table B   Pension Contributions, Excluding Settlements etc. Allocated by Type of Contribution Base, 2009

	Employer, self-employed and centr. govt. pension contributions	General pension contribution	Total
Earned income*	132,277	82,594	214,871
Transfer payments, see Table C	8,448	5,927	14,375
Pension-qualifying amounts, see Table D	19,031	–	19,031
Total	159,756	88,521	248,277

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

Employer, self-employment and centr. govt. pension contribution   General contribution

100 %

Earned income   86.5 %

P-Q amounts   7.7 %
0 % Transfer payments   5.8 %
64.3 %   35.7 %

100 % = SEK 248,277 million
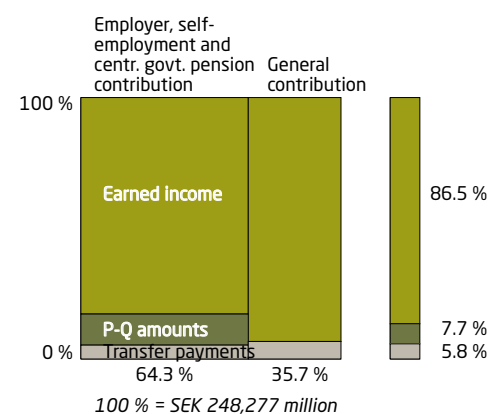
The general pension contribution is 7 percent of the sum of earned income and pension-qualifying transfer payments such as sickness cash benefits, but not including sickness and activity compensation. The general pension contribution is assessed only on the portion of such income below the ceiling of 8.07 income-related base amounts.

The pension contribution paid by employers and self-employed persons 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 B refers to the contributions received by the Swedish Social Insurance Agency in 2008.
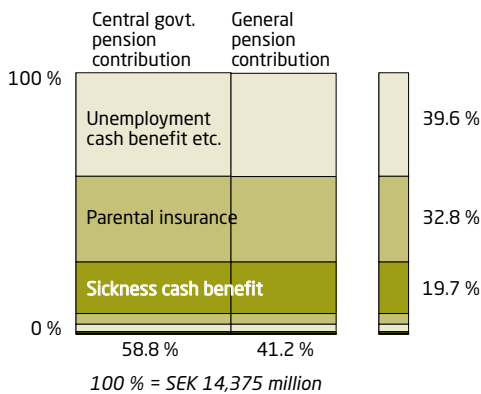
Table C   Pension Contributions for Transfer Payments, 2009

	Cent. govt. pension contrib.	General pension contrib.	Total
Sickness cash benefit	1,662	1,165	2,827
Rehabilitation cash benefit	54	38	92
Allowance for care of close relatives	6	4	10
Work injury compensation, etc.	350	245	595
Parental insurance	2,767	1,941	4,708
Care allowance	238	167	405
Unemployment cash benefit etc.	3,342	2,344	5,686
Educational allowance	28	20	48
Artists' Board	0	2	2
Allowance to disease carriers	1	1	2
Total	8,448	5,927	14,375

The allocation of the general pension contribution among the different types of transfer payments is estimated and is not shown in the accounting systems.
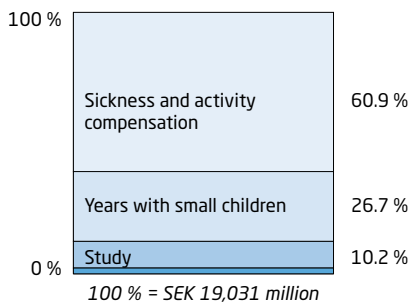
Table D   Pension Contributions for Sickness/Activity Compensation and Pension Qualifying Amounts, 2009

Sickness and activity compensation*	11,597
Amounts credited for years with small children	5,077
Amounts credited for study**	1,939
Amounts credited for compulsory national service**	418
Total	19,031

*   Amount refers to contributions for disbursements of both pension-qualifying benefits and pension-qualifying amounts. In both cases the contribution is 18.5 percent.

** A minor portion of amounts credited for study and for compulsory national service consists of pension-qualifying income.

Note 2   Pension Disbursements etc.

	2009	2008
ATP	186,954	177,350
Inkomstpension	30,439	21,832
Total pension disbursements	217,393	199,182
Transfers to European Communities	19	24
Total	217,412	199,206

In 2009 a total of SEK 217,393 million in pensions was disbursed from the National Pension Funds, thus reducing the pension liability to retired persons.

Central govt. pension contribution General pension contribution

100 %

Unemployment cash benefit etc.   39.6 %

Parental insurance   32.8 %

Sickness cash benefit   19.7 %

0 %

58.8 %   41.2 %

100 % = SEK 14,375 million

100 %

Sickness and activity compensation   60.9 %

Years with small children   26.7 %

Study   10.2 %

0 %

100 % = SEK 19,031 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 2009 the sum of SEK 19 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 217,412 million as a result of pension disbursements or transfer of pension credit.

Note 3   Return on Funded Capital

Narional Pension Fund:	First	Second	Third	Fourth	Sixth	*	2009 Total	2008 Total
Stocks and shares	30,589	29,011	25,358	29,208	1,894	–4	116,056	–228,650
of which:								
Dividends received	*2,807*	*2,526*	*2,554*	*2,944*	*150*	*–4*	*10,977*	*15,802*
Gain/-loss, listed and unlisted stocks and shares, net	*27,782*	*26,485*	*22,804*	*26,264*	*1,744*		*105,079*	*–244,452*
Bonds and other interestbearing securities	5,230	4,858	6,892	3,476	245		20,701	20,321
of which:								
Net interest	*3,080*	*2,836*	*1,907*	*2,922*	*208*		*10,953*	*14,985*
Gain/-loss, interest bearing assets, net	*2,150*	*2,022*	*4,985*	*554*	*37*		*9,748*	*5,336*
Other investments	–938	1,321	–2,512	2,413	–140		144	14,896
of which:								
Gain/-loss, derivatives, net	*988*	*2,977*	*–1,555*	*3,079*	*–224*		*5,265*	*–5,668*
Net foreign-exchange gain/-loss	*–1,926*	*–1,656*	*–957*	*–666*	*84*		*–5,121*	*20,564*
Costs of commission	–112	–182	–170	–25	0		–489	–498
Total	34,769	35,008	29,568	35,072	1,999	–4	136,412	–193,931

*   Adjustment column to adjust for effects of rounding when funds are summed up.
Source: Annual reports of the First, Second, Third, Fourth, and Sixth National Pension Funds, 2008 and 2009.

The item of Gain/-loss, derivatives, net now includes all derivatives; for this reason, there has 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 earned (see the section Costs of Administration and Capital Management).

In 2009 the special administration of the Fourth National Pension Fund was terminated. Interest income of more than SEK 9,000 was recorded during the year. This income has not been included in the table, as the amounts are rounded off to the nearest million SEK.

Note 4   Costs of Administration

	2009	2008
Swedish Social Insurance Agency	544	257
Tax administration and other agencies*	378	353
Total costs of insurance administration	922	610
First National Pension Fund	191	180
Second National Pension Fund	150	159
Third National Pension Fund	147	137
Fourth National Pension Fund	174	157
Sixth National Pension Fund	146	144
Fourth National Pension Fund, special administration	0	1
Total costs, fund administration	808	778
Total	1,730	1,388

*   Includes the Swedish Enforcement Authority and the National Institute of Economic Research (NIER).

Swedish Social Insurance Agency	31.4 %
Tax administration	21.8 %
First National Pension Fund	11.0 %
Fourth National Pension Fund	10.1 %
Second National Pension Fund	8.7 %
Third National Pension Fund	8.5 %
Sixth National Pension Fund	8.4 %

100 % = SEK 1,730 million
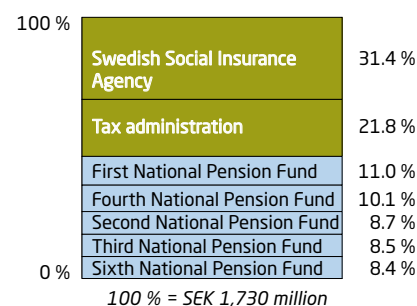
For the First–Fourth National Pension Funds, only internal administrative costs are reported. External costs of administration and custodial fees are referred to as costs of commissions and are reported as negative revenue (see Note 3). The costs of administration for the Sixth National Pension Fund 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 the section Costs of Administration and Capital Management).

Owing to phase-in provisions applicable until 2020, only a portion of administrative costs (76 percent in 2009, see Note 11) is charged to the pension balances of the insured. Each fund finances its own costs of administration by withdrawals from itself.

Note 5   Value of Change in Contribution Revenue

	2009	2008
Smoothed contribution revenue 2009	200,300	–
Smoothed contribution revenue 2008	−203,918	203,918
Smoothed contribution revenue 2007	–	-191,521
Change in smoothed contribution revenue	−3,618	12,397
(Smoothed turnover duration 2009 + smoothed turnover duration 2008)/2	x 31.76324	–
(Smoothed turnover duration 2008 + smoothed turnover duration 2007)/2	–	x 31.84909
Value of change in contribution revenue	-114,919	394,833

Duration in years.

Table A   Basis for Calculating Smoothed Value of Contribution Revenue

	2009	2008	2007	2006
Pension contributions	202,712	203,140	190,416	183,624
Smoothed contribution revenue	200,300	203,918	191,521	185,491
CPI, June	300.17	302.45	289.95	284.68

The method of calculating smoothed contribution revenue is described in Appendix B, Section 1.

Note 6   Value of Change in Turnover Duration

	2009	2008
Smoothed turnover duration 2009	31.76198	–
Smoothed turnover duration 2008	-31.76449	31.76449
Smoothed turnover duration 2007	–	-31.93368
Change in smoothed turnover duration	-0.00251	-0.16919
(Smoothed contribution revenue 2009 + smoothed contribution revenue 2008)/2	x 202,109	–
(Smoothed contribution revenue 2008 + smoothed contribution revenue 2007)/2	–	x 197,720
Value of change in turnover duration	-507	-33,452

Duration in years.

Table A   Basis for Calculating Smoothed Turnover Duration

	2009	2008	2007	2006
Pay-in duration	–	20.88140	21.07097	21.09395
Pay-out duration	–	10.78533	10.69352	10.66803
Turnover duration	–	31.66673	31.76449	31.76198
Smoothed turnover duration	31.76198	31.76449	31.93368	32.04812

Duration in years.

Smoothed turnover duration is the median turnover duration for the latest three years. The method of calculating turnover duration is described in Appendix B, Section 3. 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

	2009	2008
Estimated inkomstpension credit earned	190,809	184,861
Estimated value of ATP points earned	947	1,446
Adjustment amount, new pension credit, see Table A	6,837	-1,264
Adjustment amount, new ATP points, see Table B	14,917	32,637
Total	213,510	217,680

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.

Table A   Adjustment Amount, New Pension Credit, 2009

Confirmed inkomstpension credit earned in 2008	186,791
Estimated inkomstpension credit earned in 2008	-184,861
Adjustments affecting pension balances, etc.	-2,564
Change in amounts disbursed	7,471
Total	6,837

Since the tax assessment for the year of the financial statements has not been completed when the statements are prepared, the amount of pension credit earned during that year can only be estimated. In the Annual Report of the Pension System for 2008, pension credit earned during the year was estimated at SEK –184,861 million. After the tax assessment for 2008 had been finalized, the actual value proved to be SEK 186,791 million.

The adjustment amount of SEK –2,564 million represents adjustments, tax-assessment changes etc. affecting the size of pension balances; see Note 14, Table A. The pension liability to retirees has been changed by SEK 7,471 million because of changes in pension disbursements other than indexation (see Note 14, Table C).

Table B   Adjustment Amount, New ATP Points, 2009

Effect of difference between assumed value for 2009 and estimate for 2008, etc.	-1,180
Value of other paid-in pension contributions for ATP*	10,439
Change in amounts disbursed	5,658
Total	14,917

* Excluding value of ATP points.

The ATP liability to the economically active – that is, to individuals who have not yet begun drawing a pension – is estimated in the pension model of the Swedish Pensions Agency. The procedure is described in Note 14.

The ATP liability to retirees has changed by SEK 5,658 million because of changes in pension amounts other than indexation (see Note 14, Table C).

Of ATP points earned in 2009, only a minor portion will have impact on future pensions. The portion expected to contribute to higher pensions has been reported as the estimated value of ATP points earned (SEK 947 million). However, all contributions to the ATP pension add to the estimated pension liability. The last year in which ATP points may be earned is 2017. This means that pension contributions, except for administratively caused discrepancies, will not be as great as pension credit earned until 2018.[28]

Note 8   Indexation

	2009			2008		
	Active	Re-tired	Total	Active	Re-tired	Total
Inkomstpension, indexation	−58,238	22,298	−35,940	242,496	11,500	253,996
of which: *Effect of income index*	*14,325*	*22,298*	*36,623*	*242,496*	*11,500*	*253,996*
Effect of balance ratio	*−72,563*		*−72,563*	*–*	*–*	*–*
ATP, indexation	−11,273	111,101	99,828	54,329	77,053	131,382
of which: *Effect of income index*	*2,725*	*111,101*	*113,826*	*54,329*	*77,053*	*131,382*
Effect of balance ratio	*−13,998*		*−13,998*	*–*	*–*	*–*
Total	−69,511	133,399	63,888	296,825	88,553	385,378

The pension liability changes by the change in the income index if balancing is not activated in the system. When balancing is activated, the pension liability changes instead by the balance index.[29] The balance index consists of the income index multiplied by the applicable balance ratio. The value of indexation refers to the indexation applied to the pension liability on December 31, 2009. The pension liability to the economically active as of December 2009 obtained a return in accordance with the net change in the income index from 2009 to 2010, which was 0.3 percent, and with the applicable balance ratio, which provided a decrease of −1.7 percent. The total indexation was thus −1.4 percent for the economically active. The pension liability to retirees as of the same date obtained a return equal to the change in the income index at the end of the preceding year, 2008, which was 6.2 percent.

Note 9   Value of the Change in Life Expectancy

	2009			2008		
	Active	Re-tired	Total	Active	Re-tired	Total
Inkomstpension	–	3,489	3,489	–	3,071	3,071
ATP	4,606	14,959	19,565	6,600	17,373	23,973
Total	4,606	18,448	23,054	6,600	20,444	27,044

As used here, the term "life expectancy" refers to the assumed payout duration of an average pension, 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 a growth norm of 1.6 percent. The method of calculating economic annuity divisors is shown in Appendix B, Section 4.

A higher economic life expectancy will increase the ATP liability, both to the economically active and to retirees. In the inkomstpension system, only the liability to retirees will increase 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 divisor 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 and Distributed

Year of birth	2009		2008	
	Inheritance gains arising	Inheritance gains distributed	Inheritance gains arising	Inheritance gains distributed
1949 or earlier	4,615	6,129	4,205	5,459
1949 or later	6,802	6,900	6,451	6,542
Total	11,417	13,029	10,656	12,001

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. 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 2008 (born in 1949 or thereafter) were distributed to the respective birth cohorts in 2009. 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 an older age in 2009 (born in 1949 or earlier), the inheritance gains are distributed in the same year.

Note 11 Deduction for Costs of Administration

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 2009, 76 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, including those 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 subsequently confirmed is considered in the calculation of the administrative cost factor for the following year. The administrative cost deduction is calculated as pension balances multiplied by the administrative cost factor. The deduction in 2009 was 0.0189 percent and totalled SEK 786 (942) million.

Note 12   Fund Assets

National Pension Fund:	First	Second	Third	Fourth	Sixth	2009 Total	2008 Total
Stocks and shares	121,552	111,266	123,565	115,841	18,621	490,845	412,562
of which: Swedish	*29,757*	*42,608*	*33,914*	*38,530*	*18,372*	*163,181*	*124,364*
Foreign	*91,795*	*68,658*	*89,651*	*77,311*	*249*	*327,664*	*288,198*
Bonds and other interest-bearing assets	73,989	81,600	78,214	70,301	109	304,213	305,124
of which: Swedish issuers	*27,701*	*47,486*	*20,579*	*33,555*	*109*	*129,430*	*141,661*
Foreign issuers	*46,288*	*34,114*	*57,635*	*36,746*	*-*	*174,783*	*163,463*
Derivatives	4,323	9,709	2,304	9,100	-	25,436	23,205
Other assets	3,189	4,237	10,362	2,762	108	20,658	17,909
Total assets	203,053	206,812	214,445	198,004	18,838	841,152	758,800
Liabilities	-754	-2,522	-7,906	-2,286	-615	-14,083	-51,713
of which: Derivatives	*-344*	*-2,354*	*-2,140*	*-1,764*	*-*	*-6,602*	*-44,801*
Others	*-410*	*-168*	*-5,766*	*-522*	*-615*	*-7,481*	*-6,912*
Total	202,299	204,290	206,539	195,718	18,223	827,069	707,087

100 % = SEK 841,152 million
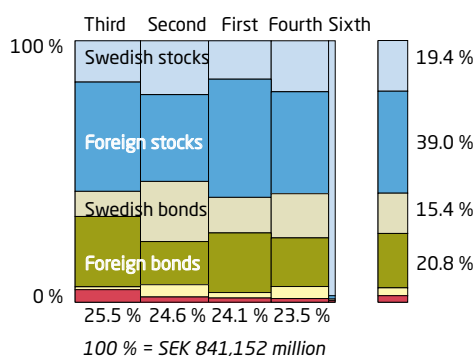
The diagram shows the assets of the National Pension Funds.

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

	2008	2007
Smoothed contribution revenue	200,300	203,918
Smoothed turnover duration	x 31.76198	x 31.76449
Contribution asset	6,361,925	6,477,351

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
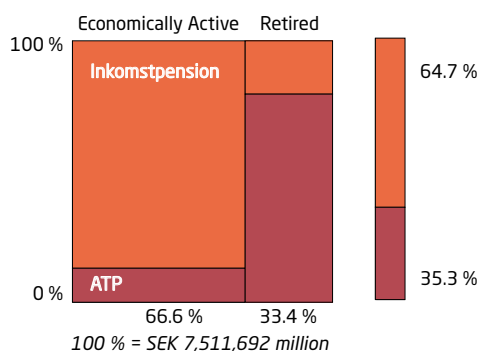
	2009			2008		
	Active	Re-tired	Total	Active	Re-tired	Total
Inkomstpension	4,349,343	512,663	4,862,006	4,351,010	375,414	4,726,424
ATP	652,280	1,997,406	2,649,686	805,674	1,895,709	2,701,383
Total	5,001,623	2,510,069	7,511,692	5,156,684	2,271,123	7,427,807

100 % = SEK 7,511,692 million

The pension liability to retirees for the ATP and the inkomstpension is calculated in the same manner for both. The first step is to add up the pension disbursements to each birth cohort in December and to multiply the total by 12 to obtain a theoretical annual amount. The annual amount is then multiplied by the economic life expectancy for each birth cohort; the product is the pension liability to that cohort. The sum of the pension liabilities to all birth cohorts is the total liability to retirees. 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, 2009, with the addition of the estimated pension credit earned in 2009. 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, Section 4.

The ATP liability to the economically active cannot be calculated directly from the data in the records of pension credit earned, but is estimated in the Swedish Pensions Agency pension model. The estimate is made for the birth cohorts whose pensions will be calculated partly by the rules of the ATP system (those born no later than 1953) and who have not reached age 65.

In order to determine the ATP liability, an estimate is made of the ATP of the respective birth cohorts in the year when they reach 65. The estimated annual amount for each cohort is multiplied by the economic annuity divisor for 65-year-olds in the year of the accounts. To obtain the present value of the estimated pension liability, the liability is reduced by the cohort's expected future contributions to the system and discounted by the expected future increase in the income index. In the calculation it is assumed that the income index will increase by 2 percent annually. The ATP liability to the economically active will gradually diminish and will in principle be gone entirely by 2018.

Table A **Analysis of the Change in Inkomstpension Liability to the Economically Active, 2009**

Inkomstpension liability to the economically active, December 31, 2008	4,351,010
of which estimated inkomstpension credit earned in 2008	–184,861
Pension balance, December 31, 2008	4,166,149
Inheritance gains arising from persons dying before age 60*	–6,802
Adjustments affecting pension balances**	–348
Opening pension balance, 2009	4,158,999
Changes in tax assessments etc. affecting pension balances	–2,216
Confirmed inkomstpension credit earned in 2008	186,791
Distributed inheritance gains from persons dying at or after age 60	6,129
Distributed inheritance gains from persons dying before age 60	6,900
Indexation	–58,238
Deduction for administrative costs	–786
Pensions drawn	–135,342
Pensions revoked	912
Inheritance gains arising, persons dying at or after age 60	–4,615
Pension balances as of December 31, 2009	4,158,534
Estimated inkomstpension credit earned in 2009	190,809
Inkomstpension liability to the economically active as of December 31, 2009	4,349,343

*   Distributed in 2009.
** 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, 2008**

ATP liability to the economically active, December 31, 2008	805,674
Effect of difference between assumption for 2009 and estimate in 2008 etc.	–1,180
Opening ATP liability, 2009	804,494
Indexation	–11,273
Estimated value of paid-in contributions for the ATP, 2009	947
Pensions drawn	–156,933
Value of other paid-in contributions for the ATP	10,439
Value of change in life expectancy	4,606
ATP liability to the economically active, December 31, 2009	652,280

Table C   **Analysis of the Change in Pension Liability to Retirees, ATP and Inkomstpension, 2009**

	Inkomst-pension	ATP	Total
Pension liability to retirees, December 31, 2008	375,414	1,895,709	2,271,123
Additional liability to the economically active	134,430 *	156,933 **	291,363
Change in amounts disbursed	7,471	5,658	13,129
Pensions disbursed ***	-30,439	-186,954	-217,393
Indexation	22,298	111,101	133,399
Value of change in life expectancy	3,489	14,959	18,448
Pension liability to retirees, December 31, 2009	512,663	1,997,406	2,510,069

*   Net of Pensions drawn and Pensions revoked, see Table A.
**   See Table B.
*** See Note 2.

The liability to retirees is increased by indexation and a higher life expectancy, and it is decreased by disbursements made during the year. Pension amounts can change because of 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. 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

	2009	2008
Pension disbursements from fund insurance	737	734
Pension disbursements from conventional insurance	92	73
Total pension disbursements	829	807
Transferred to European Communities	1	1
Total	830	808

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 PPM management of 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 2009, SEK 28 (19) million was disbursed in supplementary amounts, as shown in Note 24.

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 2009 the sum of SEK 0.7 million was transferred from the premium pension system.

Note 16 Return on Funded Capital

		Fund insurance	Conventional insurance	2009 Total	2008 Total
Stocks and shares		81,212	130	81,342	-109,841
of which:	*Direct return*	*6,171*	*10*	*6,181*	*4,836*
	Realized and unrealized capital gains	*75,041*	*120*	*75,161*	*-114,677*
Bonds and other interest-bearing securities		23	-30	-7	970
of which:	*Direct return (net interest)*	*4*	*-1*	*3*	*23*
	Realized and unrealized capital gains	*19*	*-29*	*-10*	*947*
Net foreign-exchange gain/-loss		-770	-	-770	2,654
Subtotal, return		80,465	100	80,565	-106,217
Change, conventional insurance		-	436	436	-105
Total		80,465	536	81,001	-106,322

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.

Note 17 Costs of Administration

	2009	2008
Operating expenses	340	299
Financial items, net	−4	133
Total	336	432

Financial items, net, refer primarily to borrowing expenses, gain/-loss on trade inventories and interest revenue (net). Costs of fund management are paid directly from insurance assets and thus are not included in PPM operating expenses. Total costs of administration in 2009 were SEK 343 (437) million, of which SEK 7 (5) million are included in Change, conventional insurance, in Note 16. A presentation of the respective gross and net reported costs of the pension system is provided in the section Costs of Administration and Capital Management.

Note 18 New Pension Credit

	2009	2008
Confirmed premium pension credit earned in 2008	30,987	-
Confirmed premium pension credit earned in 2007	-	30,118
Total	30,987	30,118

In the premium pension system the contribution revenue is equal to new pension credit including interest for the period during which contribution moneys are managed until they are invested in the funds chosen by the insured. Also included are changes in pension credit earned in previous years and distributed rebates of fund management charges.

Note 19 Change in Value

The pension liability was changed by the return on premium pension funds totalling SEK 80,565 (–106,217) million; see Note 16.

Note 20 Inheritance Gains Arising, Inheritance Gains Distributed

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 2009 inheritance gains distributed were SEK 655 (663) million; this amount was determined by the sum of the capital released by deaths in calendar year 2008. Inheritance gains distributed include SEK 12 (7) million in connection with 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 2009, a total of 7,990 (7,789) persons transferred an aggregate amount of SEK 54 (49) million between spouses or registered partners.

Note 21 Deduction for Costs of Administration

The amount of SEK 447 (437) million is for fees deducted by the PPM to finance its costs of administration. In 2008, the principle for fee deduction has been changed. Previously the fee deducted consisted only of a percentage, but now there is also a ceiling of SEK 110 on the fee. For 2009, the fee was 0.19 (0.16) percent of the account balances of pension savers. During the build-up phase and until 2018, the PPM 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 was based on the cost level forecast for 2009.
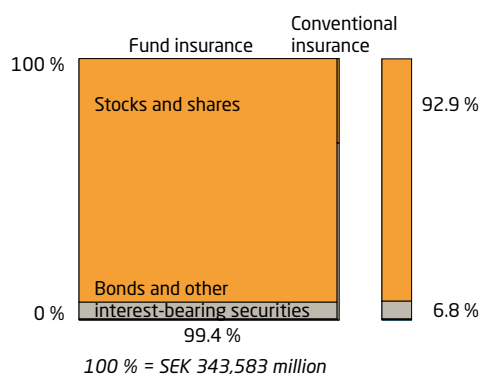
Note 22 Insurance Assets

	Fund insurance	Conventional insurance	2009 Total	2008 Total
Stocks and shares	318,326	706	319,032	206,449
Bonds and other interest-bearing securities	21,836	1,498	23,334	25,925
Trade in progress and inheritance gains arising	1,209	8	1,217	959
Total	341,371	2,212	343,583	233,333

Inheritance gains arising for 2009 total SEK 646 (647) million, of which fund insurance accounts for SEK 632 (636) million and conventional insurance for SEK 14 (10) million; these gains will be distributed to pension savers in 2010.

As of December 31, 2009, the number of premium pension savers totalled 6,165,189, of whom 6,084,238 had invested their savings in fund insurance and 80,951 in conventional insurance. The number of premium pension savers receiving pension disbursements was 664,212.

Fund insurance / Conventional insurance

Stocks and shares — 92.9 %
Bonds and other interest-bearing securities — 6.8 %
99.4 %

100 % = SEK 343,583 million

Note 23 Other Assets

	2009	2008
Temporarily managed preliminary contributions	27,584	28,180
PPM's administrative inventory of fund shares (trading inventory)	87	29
Other assets	2,019	1,253
Total	29,690	29,462

The temporary management of preliminary contributions is for pay-in year 2009.

The PPM's administrative inventory of fund shares is used to facilitate trade in fund shares by reducing the number of trading transactions with fund managers.

Other assets include intangible assets, cash and bank balances, receivables, prepaid expenses and accrued revenue, as well as fixtures and other long-term assets.

Note 24   Change in Results Brought Forward

	Fund insurance	Conventional insurance	2009 Total	2008 Total
Opening results brought forward: Consolidation fund	-1,523	247	-1,276	-1,348
Effect of change in accounting principle*	-	-	-	191
Recalculated opening results brought forward	-1,523	247	-1,276	-1,157
Rebate paid from consolidation fund**	-	-28	-28	-19
Net income/-loss for the period	111	436	547	-100
Total results brought forward	-1,412	655	-757	-1,276

*   The change concerns the accounting principle for calculation of the pension liability for conventional insurance; see Note 25.

** The rebate paid in 2009/2008 is included in the item Opening results brought forward in the balance sheet.

The PPM reports negative results brought forward for its overall operations. The solvency provisions in the Insurance Businesses Act do not apply to the PPM; through 2018 negative results brought forward (accumulated deficits) will be financed by overdrafts with the National Debt Office. It is expected that by 2018 a balance between assets and liabilities will be achieved. Conventional insurance reports a negative result that is charged to the consolidation fund under Results brought forward. The amounts in the consolidation fund are distributed to pension savers as a refund in connection with pension disbursements.

Note 25   Pension Liability

	2009	2008
Pension liability, fund insurance	341,371	231,601
Pension liability, conventional insurance	1,543	1,481
Total	342,914	233,082

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 value of the insurance assets in Note 22.

The item of Pension liability, conventional insurance, is calculated for each pension saver choosing this form of insurance and is the capital value of the remaining guaranteed disbursements. The value is calculated on assumptions about future return, life expectancy and operating expenses. Information on the calculation of economic annuity divisors is found in Appendix A.

In the calculation of Pension liability, conventional insurance, the method of valuation for the guaranteed commitments to the insured was changed as from April 1, 2008. The modified calculation entails a change of accounting principle; the change reduces the pension liability and increases results brought forward by SEK 191 million in 2008; see Note 24.

Table A   Analysis of the Change in Pension Liability, Fund Insurance, 2009

Pension liability, fund insurance, December 31, 2008	231,601
Confirmed premium pension credit earned in 2008*	30,490
Inheritance gains distributed**	–643
Change in value	80,465
Deduction for costs of administration	–447
Decrease in liability because of pensions withdrawn, 2009	–737
Inheritance gains arising	643
Premium pension capital as of December 31, 2009	341,372
Adjustment affecting premium pension capital***	–1
Pension liability, fund insurance, December 31, 2009	341,371

*   Includes –1 in tax assessment changes and changes in pension credit.
**   Inheritance gains, capital released in 2008, distributed in 2009.
*** Transfers to European Communities, etc.

Table B   Analysis of the Change in Pension Liability, Conventional Insurance, 2009

Pension liability, conventional insurance, December 31, 2008	1,481
Confirmed premium pension credit earned in 2008*	497
Inheritance gains distributed**	–12
Change in value	100
Decrease in liability because of pensions drawn, 2009	–92
Other	5
Change in pension liability***	−436
Premium pension capital as of December 31, 2009	1,543
Pension liability, conventional insurance, December 31, 2009	1,543

*   Includes 0 in tax assessment changes and changes in pension credit.
**   Inheritance gains, capital released in 2008, distributed in 2009.
*** Change in pension liability includes –7 in costs of administration and +12 in inheritance gains arising, 2009; see Note 24, Change in Results Brought Forward.

As from 2007, results brought forward are excluded from the calculation of the pension liability. The pension liability is changed by new pension credit earned, changes in the extent of pension withdrawal, changes in tax assessment, changes in value of assets, costs of administration, pension disbursements and estimates of future mortality for the insured.

Note 26   Other Liabilities

	2009	2008
Liability relating to preliminary contributions	27,588	28,179
Other liabilities	3,528	2,810
Total	31,116	30,989

Liabilities relating to preliminary contributions consist of unconfirmed pension credit for pay-in year 2009 and correspond to the assets invested under temporary management; see Note 23.

Other liabilities consist of fund trading in progress, accounts payable to suppliers, borrowings from the National Debt Office, accrued management fees, accrued expenses and prepaid revenue.

BDO

AUDIT REPORT

on the

ANNUAL REPORT OF THE SWEDISH PENSION SYSTEM

To the Swedish Pensions Agency:

We have audited the Annual Report of the Swedish Pension System for 2009. In accordance with the Regulations on Annual Reporting of the Financial Position and Development of the Earnings Related Old Age Pension System (2002:135), the Swedish Pensions Agency is required to provide this Annual Report. The Director General of the Swedish Pensions Agency is responsible for preparing the Annual Report and for its conformity with the Earnings Related Old Age Pension Act (1998:674). Our responsibility is to express an opinion on the Annual Report based on our audit.

We conducted our audit in accordance with generally accepted auditing standards in Sweden. Those standards require that we plan and perform the audit so as to establish with reasonable certainty that the Annual Report is free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the Annual Report. An audit also involves assessing the accounting principles used and their application by the Director General as well as significant estimates made by the Director General when preparing the Annual Report, and evaluating the overall presentation of the Annual Report.

Our audit covers the income statements and balance sheets of the inkomstpension, premium pension and income-related old-age pension as well as notes and comments, accounting principles and other explanatory information. Our audit has not involved reviewing the principles of the national public pension or reviewing projections or other information outside the scope of our audit.

We believe that our audit provides a reasonable basis for our opinion as set forth below:

The Annual Report has been prepared in accordance with the Earnings Related Old Age Pension Act (1998:674), with the Regulations on Annual Reporting of the Financial Position and Development of the Earnings Related Old Age Pension System (2002:135) and otherwise with what is described in the Annual Report under the heading of Accounting Principles. The balance ratio shown in the Annual Report has been calculated in conformity with the Regulations for Calculation of the Balance Ratio (2002:780).

Stockholm, 12th March 2010

Ove Olsson   Ulf H Davéus
Authorized Public Accountant   Authorized Public Accountant

Appendix A. Calculation Factors [*]

The Earnings Related Old Age Pension Act, or LIP, (1998:674), requires the Swedish Pensions Agency to calculate the income index. In addition, the Agency is obligated 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 LIP, 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 rebate 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.

Until January 1, 2010, the law and regulations stated that the Swedish Social Insurance Agency and the Premium Pension Authority, respectively, were responsible for making these calculations.

Income Index

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

$Income\ Index(t) =$

$$\left(\frac{u(t-1)}{u(t-4)} \times \frac{CPI(t-4)}{CPI(t-1)} \right)^{\frac{1}{3}} \times \frac{CPI(t-1)}{CPI(t-2)} \times k \times Income\ Index(t-1)$$

$$u(t) = \frac{Y(t)}{N(t)}$$

where

t = calendar year

$CPI(t)$ = consumer price index for June of year t

k = adjustment factor for error in estimation of $u(t-2)$ and $u(t-3)$

$Y(t)$ = total pension-qualifying income without limitation by the ceiling, persons 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

Indexation
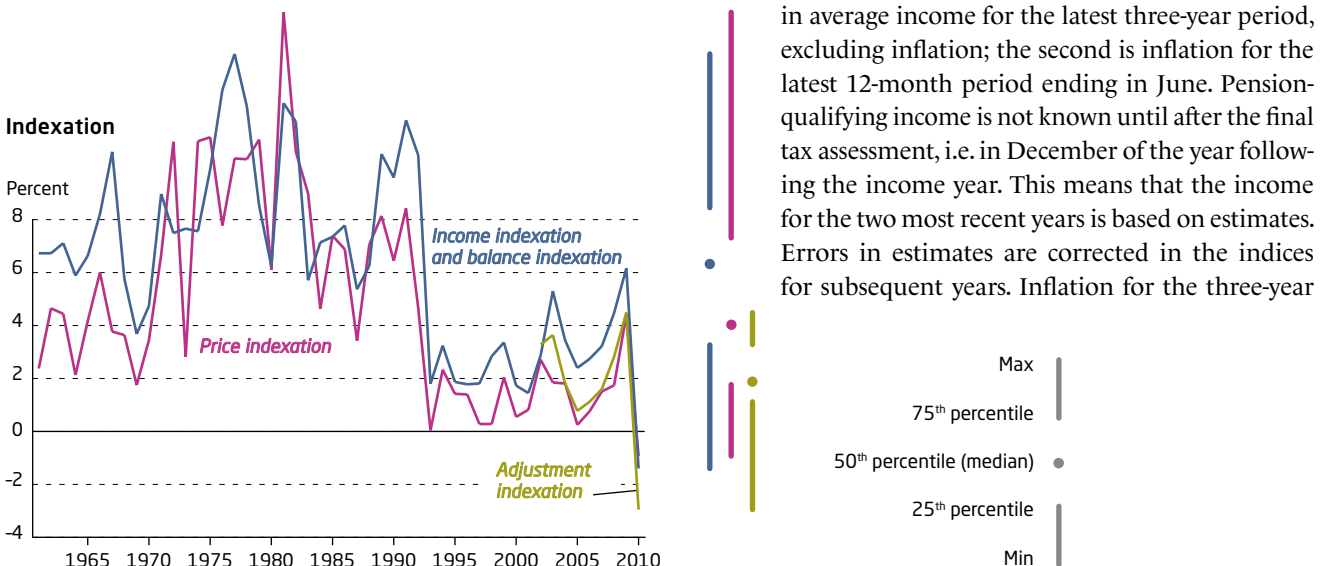
period is excluded, and the inflation for the most recent year is restored, to permit more rapid adjustment of pensions to changes in the inflation rate than would have resulted with a "pure" three-year moving average for the development of income.

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.

$Balance\ index(t) \quad = I(t) \times BR(t)$

$Balance\ index(t+1) =$
$\quad Balance\ index(t) \times \left(I(t+1) \big/ I(t)\right) \times BR(t+1) = I(t+1) \times BR(t) \times BR(t+1)$

where
$I(t)$ = income index, year t
$BR(t)$ = balance ratio, year t

At the end of year $t–1$, 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.

Rate of Rebate

If an individual elects to draw her/his premium pension in the form of conventional insurance, the amount disbursed is recalculated each year. It may be higher than the guaranteed amount if the conventional life insurance operation achieves a better result than was assumed when the guaranteed amount was calculated. The result of the conventional insurance operation is reflected in the rate of rebate used to increase the value of conventional insurance.

The rate of rebate does not affect the pension liability, as the latter is calculated on the basis of the guaranteed amount.

Rate of Rebate and Guarantee

65
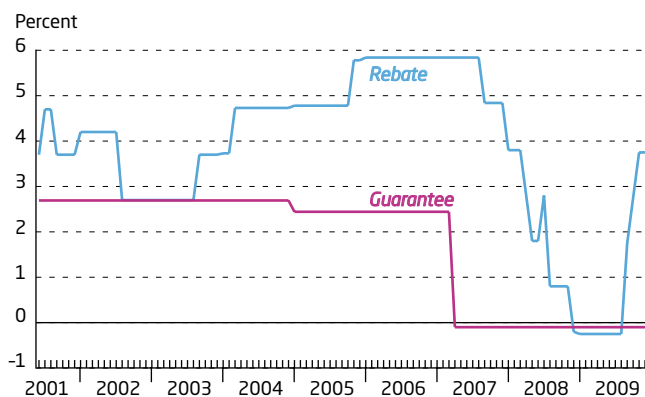
Inheritance Gain Factors for the Inkomstpension

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 inheritance gain factor for the inkomstpension.

$$Inheritance\ Gain\ Factor_i(t) = 1 + \frac{\displaystyle\sum_{j=2}^{17} PBd_{j-1}(t-1)}{\displaystyle\sum_{j=2}^{17} PB_{j-1}(t-1)} \qquad \text{for } i = 2, 3, \ldots 17$$

$$Inheritance\ Gain\ Factor_i(t) = 1 + \frac{PBd_{i-1}(t-1)}{PB_{i-1}(t-1)} \qquad \text{for } i = 18, 19, \ldots 60$$

$$Inheritance\ Gain\ Factor_i(t) = \frac{(L_{i-1}(t) + L_i(t))}{(L_i(t) + L_{i+1}(t))} \qquad \text{for } i = 60, 61, \ldots$$

where

|		
i	=	age at end of year t
$PBd_{i-1}(t-1)$	=	total pension balances in year $t-1$ for persons dying in year $t-1$ in age group $i-1$
$PB_{i-1}(t-1)$	=	total pension balances in year $t-1$ for survivors in year $t-1$ in age group $i-1$
$L_i(t)$	=	number of survivors in year t out of 100 000 born in age group i, 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 old 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. Because 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 life-expectancy statistics from Statistics Sweden. The distribution of inheritance gains to older persons is made in the year of death.

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.

The impact of inheritance gains on the pension liability is limited, for it means that the pension balances of de-

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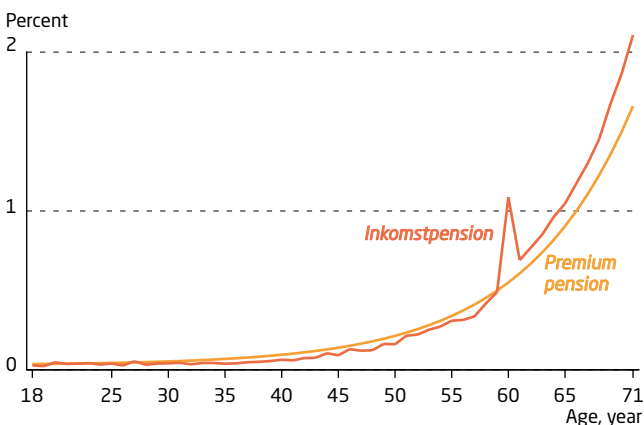
The inheritance gain factor for the inkomstpension for 60-year-olds is shown in the diagram as the two inheritance gain factors multiplied by each other. In the actual distribution of inheritance gains, however, the two different inheritance gains factors are applied to different bases.

ceased 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 reported in Note 10. For the group dying before their 60th year, the difference is due to tax assessment changes between the time when inheritance gain factors are calculated and the time when the gains are distributed, and to 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 and are allocated through distribution of actual gains. 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 p. 69). 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 balance of the premium pension account as of December 31 in year $t–1$. The amounts of the inheritance gains are adjusted by a factor that equalizes 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.

Administrative Cost Factor, Inkomstpension

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

$$Administrative\ cost\ factor(t) = 1 - \big[(B(t) \times A(t) + J(t–1)) / PB(t–1)\big]$$

where
$B(t)$ = budgeted costs of administration, year t
$A(t)$ = proportion charged to pension balances, year t
$J(t–1)$ = adjustment amount, equals the difference between the amount that would have been deducted from pension balances in year $t–1$, based on actual cost in year $t–1$ and the adjustment amount in year $t–2$, and the actual deduction from pension balances in year $t–1$.
$PB(t–1)$ = total pension balances, year $t–1$

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 21).

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 interest of 1.6 percent (the norm) credited to pensions in advance.

Annuity Divisors$_i$ =

$$\frac{1}{12L_i} \sum_{k=i}^{r} \sum_{X=0}^{11} \left(L_k + (L_{k+1} - L_k)\frac{X}{12} \right)(1.016)^{-(k-i)}(1.016)^{-X/12} \text{ for } i = 61, 62, ...r$$

where

$k-i$	=	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, in accordance with recalculated annuity divisors, at the start 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.

Withdrawal of 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, Section 4. The economic annuity divisors are used to calculate the pension liability to retirees.

Confirmed Annuity Divisors for the Inkomstpension*

	Age 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

* 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.

$$Annuity\ Divisors_x = \int_0^\infty e^{-\delta t} \frac{l(x+t)}{l(x)}\ dt$$

$$l(x) = e^{-\int_0^x \mu(t)dt}$$

$$\mu(x) = a + be^{cx}$$

where
x = exact age at time of retirement

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.[30] 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 2009–2060 for individuals born in 1946.[31] In the calculation of the guaranteed amount in conventional insurance, use is made of Statistics Sweden's low-mortality alternative, reduced by a further 10 percent. By contrast, Statistics Sweden's main alternative is used for mortality in calculating the pension amounts to be paid out. The purpose is to ensure that the assumed payout profile is as realistic as possible and not unnecessarily conservative.

Since April 1, 2007, the interest credited in fund insurance, δ, has been 4.0 percent before the charge for costs of administration in fund insurance. From that date on, a premium pension paid out in the form of conventional insurance is calculated with an interest rate that is presently 2.3 percent, and the guaranteed amount with an interest rate of 0.0 percent. The interest rate used in calculating the guaranteed amount was previously much higher; see the diagram Rate of Rebate and Guarantee.

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. A charge of 0.1 percent is deducted from these interest rates in order to cover the premium pension costs.

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

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

[31] Persons born in 1946 constitute the birth cohort closest to age 65 during 2010–2012. Current values: a=0.0064, b=0.00000018, c=0.1498, δ=3.8221 percent, equivalent to an annual interest rate of 3.8961 percent. For x>97, μ(x) merges with a straight line with a slope of 0.001.

has no effect on the pension liability. In the case of conventional insurance, the pension liability is equal to the actuarial provisions (FTA) and is calculated by multiplying every guaranteed amount by an annuity divisor. The annuity divisor is determined in the same way as pension amounts. 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 for Annual Amount (Fund Insurance)

Without survivor benefit

Age 61	62	63	64	65	66	67	68	69	70
15.09	14.78	14.46	14.13	13.80	13.45	13.09	12.73	12.35	11.97

With survivor benefit

Age, co-insured	Age, primary insured 61	62	63	64	65	66	67	68	69	70
55	18.35	18.25	18.15	18.06	17.97	17.88	17.80	17.73	17.65	17.58
60	17.56	17.42	17.29	17.16	17.03	16.91	16.80	16.69	16.59	16.49
65	16.85	16.66	16.48	16.31	16.13	15.97	15.81	15.65	15.50	15.36
70	16.27	16.04	15.81	15.59	15.36	15.14	14.92	14.71	14.50	14.30

Annuity Divisors for Annual Amount (Conventional Insurance)

Without survivor benefit

Age 61	62	63	64	65	66	67	68	69	70
18.27	17.81	17.34	16.86	16.38	15.88	15.38	14.88	14.36	13.84

With survivor benefit

Age, co-insured	Age, primary insured 61	62	63	64	65	66	67	68	69	70
55	23.10	22.94	22.79	22.64	22.51	22.38	22.26	22.14	22.04	21.93
60	21.77	21.55	21.34	21.13	20.94	20.76	20.59	20.43	20.28	20.14
65	20.64	20.35	20.07	19.80	19.53	19.28	19.04	18.81	18.60	18.39
70	19.78	19.43	19.08	18.73	18.39	18.06	17.74	17.43	17.13	16.85

Annuity Divisors for Guaranteed Annual Amount (Conventional Insurance)

Without survivor benefit

Age 61	62	63	64	65	66	67	68	69	70
27.20	26.35	25.49	24.65	23.81	22.97	22.15	21.33	20.52	19.72

With survivor benefit

Age, co-insured	Age, primary insured 61	62	63	64	65	66	67	68	69	70
55	36.72	36.39	36.07	35.77	35.50	35.24	35.00	34.78	34.57	34.38
60	33.92	33.47	33.06	32.66	32.29	31.94	31.62	31.31	31.03	30.77
65	31.71	31.15	30.62	30.11	29.63	29.18	28.75	28.34	27.96	27.60
70	30.09	29.44	28.80	28.19	27.60	27.04	26.50	25.98	25.49	25.02

Appendix B.
Mathematical Description of the Balance Ratio

Excerpts from Regulation 2009:1247 on the Calculation of the Balance Ratio*

Pursuant to Chapter 1, §§ 5 a and 5 b of the Earnings Related Old Age Pension Act (1998:674), the Swedish Pensions Agency is to calculate the balance ratio for each year in accordance with the following formula.

1. **Balance ratio, *BR*,**

$$BR(t+2) = \frac{CA(t) + F(t)}{S(t)} \tag{1.0}$$

$$CA(t) = \overline{C}(t) \times \overline{T}(t) \tag{1.1}$$

$$\overline{BF}(t) = \frac{BF(t) + BF(t-1) + BF(t-2)}{3} \tag{1.2}$$

$$\overline{C}(t) = \frac{C(t) + C(t-1) + C(t-2)}{3} \times \left(\frac{C(t)}{C(t-3)} \times \frac{CPI(t-3)}{CPI(t)} \right)^{\frac{1}{3}} \times \left(\frac{CPI(t)}{CPI(t-1)} \right) \tag{1.3}$$

$$\overline{T}(t) = median\left[T(t-1), T(t-2), T(t-3) \right] \tag{1.4}$$

where

t	= calendar year if the variable refers to flows, end of calendar year if the variable refers to stocks
$CA(t)$	= contribution asset, year t
$F(t)$	= 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 in accordance with Ch. 6, § 3 of the National Pension Funds Act (2000:192) and Ch.4, § 2 of the Sixth National Pension Fund Act (200:193) 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
$\overline{C}(t)$	= smoothed contribution revenue to the pay-as-you-go system, year t
$\overline{T}(t)$	= smoothed turnover duration, year t
$C(t)$	= contributions to the pay-as-you-go system, year t
$T(t)$	= turnover duration, year t
$CPI(t)$	= consumer-price index for June, year t

2. **The average retirement age, $\overline{R}$, is calculated as**

$$\overline{R}(t) = \frac{\sum_{i=61}^{R^*(t)} P_i^*(t) \times G_i(t) \times i}{\sum_{i=61}^{R^*(t)} P_i^*(t) \times G_i(t)} \quad , \; \overline{R} \text{ rounded off to nearest whole number} \tag{2.0}$$

where

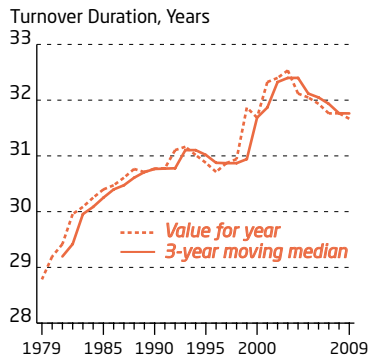|	
i	= age at year-end
$R^*(t)$	= the oldest age group for which pensions have been granted in year t
$P_i^*(t)$	= the total of pensions granted monthly in year t to persons in age group i
$G_i(t)$	= annuity divisor in year t for age group i

3. Turnover duration, T,

$$T(t) = ID(t) + OD(t) \tag{3.0}$$

Turnover Duration, Years

	Change measured percent	Change in percent with 3-year moving median
3	0	
2	0	4
1	148	148
0	002222244455568	00000022223445668
−0	223455556	0234559
−1	3	

1 | 148   to be read as three annual changes of 1.1, 1.4 and 1.8 percent, respectively

3.1 Pay-in duration, ID,

$$ID(t) = \frac{\sum_{i=16}^{\overline{R}(t)-1} \overline{E}_i(t) \times L_i(t) \times \left(\overline{R}(t) - i - 0.5\right)}{\sum_{i=16}^{\overline{R}(t)-1} \overline{E}_i(t) \times L_i(t)} \tag{3.1.1}$$

$$\overline{E}_i(t) = \frac{\dfrac{E_i(t)}{N_i(t)} + \dfrac{E_{i+1}(t)}{N_{i+1}(t)}}{2} \quad \text{for } i = 16, 17, \ldots, \overline{R}(t)-2 \tag{3.1.2}$$

$$\overline{E}_{\overline{R}(t)-1}(t) = \frac{E_{\overline{R}(t)-1}(t)}{N_{\overline{R}(t)-1}(t)} \tag{3.1.3}$$

$$L_i(t) = L_{i-1}(t) \times h_i(t) \text{ for } i = 17, 18, \ldots, \overline{R}(t)-1 \text{ where } L_{16}(t) = 1 \tag{3.1.4}$$

$$h_i(t) = \frac{N_i(t)}{N_{i-1}(t-1)} \quad \text{for } i = 17, 18, \ldots, \overline{R}(t)-1 \tag{3.1.5}$$

where

$E_i(t)$ = the sum of 16 percent of pension qualifying-income calculated in accordance with Ch. 2 of the Earnings Related Old Age Pension Act (1998:674) and 16 percent of the imputed pension-qualifying income calculated in accordance with Ch. 3 of said act in pay-in year t age group i for individuals who have not been registered as deceased

$N_i(t)$ = 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 in year t

$h_i(t)$ = change in proportion of persons in age group i in year t

3.2   Pay-out duration, *OD*,

$$OD(t) = \frac{\sum_{i=\bar{R}(t)}^{R(t)} 1.016^{-(i-\bar{R}(t)+0.5)} \times L_i^*(t) \times \left(i-\bar{R}(t)+0.5\right)}{\sum_{i=\bar{R}(t)}^{R(t)} 1.016^{-(i-\bar{R}(t)+0.5)} \times L_i^*(t)} \qquad (3.2.1)$$

$$L_i^*(t) = L_{i-1}^*(t) \times he_i(t) \text{ where } L_{60}^*(t) = 1 \qquad (3.2.2)$$

$$he_i(t) = \frac{P_i(t)}{P_i(t) + Pd_i(t) + 2 \times Pd_i^*(t)} \quad \text{for } i = 61, 62, ..., R(t) \qquad (3.2.3)$$

where

$R(t)$	=	the oldest age group receiving a pension in year t
$P_i(t)$	=	total pension disbursements in December of year t to age group i
$Pd_i(t)$	=	total of the 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
$Pd_i^*(t)$	=	total of the 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 in year t
$he_i(t)$	=	change in pension disbursements due to deaths in year t, age group i

4.   The pension liability, *D*,

$$D(t) = AD(t) + DD(t) \qquad (4.0)$$

$$AD(t) = K(t) + E(t) + ATP(t) \qquad (4.1)$$

$$DD(t) = \sum_{i=61}^{R(t)} P_i(t) \times 12 \times \left(\frac{Ge_i(t) + Ge_i(t-1) + Ge_i(t-2)}{3} \right) \qquad (4.2)$$

$$Ge_i(t) = \frac{\sum_{j=i}^{R(t)} \frac{1}{2} \times \left(L_j^*(t) + L_{j+1}^*(t)\right) \times 1.016^{\,i-j-1}}{L_i^*(t)} \quad \text{for } i = 61, 62, ..., R(t) \text{ where } L_{R(t)+1}^* = 0 \qquad (4.3)$$

where

$AD(t)$	=	pension liability in year t in regard to pension commitment for which disbursement has not commenced (pension liability to the economically active)
$DD(t)$	=	pension liability in year t in regard to pensions being disbursed to retired persons in the pay-as-you-go system
$K(t)$	=	total of pension balances in year t according to Ch. 5, § 2 of the Earnings Related Old Age Pension Act (1998:674)
$E(t)$	=	estimated pension credit for the inkomstpension earned in year t according to Ch. 4, §§ 2–6 of said act
$ATP(t)$	=	estimated value of the ATP in year t for persons who have not yet begun to receive this pension
$Ge_i(t)$	=	economic annuity divisor for age group i in year t

List of Terms

in Swedish

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**

recalculation of pensions by the change in the income index, reduced by 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:

Adjustment indexation (at the end of year t–1) = $[I(t)/I(t-1)]$ /1.016

annuity divisor*   **delningstal**

a number that reflects remaining life expectancy at retirement, taking into account the imputed interest credited to the pension to be paid.

In the calculation of the annual inkomstpension and the premium pension, the individual's pension balance and premium pension capital, respectively, are divided by an annuity divisor at the time of retirement (see Appendix A).

Economic annuity divisors are used in the calculation of the pension liability (see Appendix B).

ATP   **tilläggspension**

corresponds to the former ATP and 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 is equivalent 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**

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.

balance ratio
balanstal

the assets of the pay-as-you-go system, that is, the contribution asset and the buffer fund, divided by the pension liability of the system. The balance ratio can be considered equivalent to the solvency ratio in a funded system. Unlike the solvency ratio, however, the balance ratio provides no information on the amount of funded assets in relation to the pension liability.

balancing
balansering

a method of ensuring via indexation of the pension liability for the inkomstpension (pension balances and pensions paid) that the disbursements of the insurance system will not exceed its revenue. Balancing is activated if the balance ratio drops below 1.0000, that is, if the pension liability exceeds the assets of the system. In that case, the pension liability is compounded at a rate approximately equal to the system's internal rate of return.

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.

ceiling on contributions
avgiftstak

8.07 income-related base amounts. The individual pension contribution and the central government pension contribution are paid on incomes up to this ceiling; the old-age pension contribution is paid on all earned income, but the contribution on the portion of income above the ceiling is not paid to the pension system, but to the central government.

ceiling on pension-qualifying income*
intjänandetak

7.5 income-related base amounts. The maximum income – after deduction of the individual pension contribution – for which pension credit is earned.

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. For sickness and activity compensation and so-called pension qualifying amounts, the contribution is 18.5 percent.

charge for costs of administration*
administrationsavgift

a charge to cover costs of management and operations. Pension balances are reduced by the administrative costs of the inkomstpension and ATP pension systems. This charge is deducted from pension balances as a percentage based on an administrative cost factor. For the premium pension, the charge for costs of administration is taken as a percentage deduction from the premium pension capital of the insured (see Appendix A).

compounding
förräntning

in this report, synonymous with indexation.

contribution asset
avgiftstillgång

the value of the inflow of contributions to the inkomstpension. It is calculated through multiplication of smoothed annual contribution revenue by smoothed turnover duration.

contribution base
avgiftsunderlag

the income and other amounts on which pension contributions are paid. The contribution base consists primarily of earned income, 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 insurer guarantees that the insured will receive a specified nominal pension amount dependent on the pension balance of the insured. With conventional insurance, the insured have no say in the management of their pension balances. Thus, the level of investment risk is determined by the insurer, who also bears this risk.

defined-benefit pension system
förmånsbestämt pensionssystem

a pension system in which the insurer 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. In a public pension system, the insurer is the taxpayers, which means that contributions/taxes to the system may vary. The value of a pension is set in advance in terms of a certain amount or level, such as final earnings or average income.

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 with no guaranteed pension amount. 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 premiums paid in are set aside and invested until the time of pension withdrawal. The premium pension system is an example of a funded system.

guarantee rule/guaranteed supplement   garantiregel/garantitillägg
a provision guaranteeing that individuals born between 1938 and 1953 will receive a pension at least equivalent to that which they had earned in the ATP system through 1994.

guaranteed pension   garantipension
provides basic income security for retired individuals who have had little or no income. The guaranteed pension is a supplement to the income-related 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.

The change in the index is calculated as the average change in real income for the latest three-year period, with the addition of inflation in the latest 12-month period ending with June (see Appendix A).

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

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

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
the portion of the pension contribution, 7 percent of income up to the ceiling for contributions, paid by the insured together with tax withheld.

inheritance gain*   arvsvinst
the pension balances, or premium-pension capital, of deceased persons, which are "inherited" by the surviving insured (see Appendix A).

inkomstpension
<div align="right">inkomstpension</div>

the portion of the income-related old-age pension linked to 16 percent of the pension base. The term inkomstpension sometimes includes the ATP.

Here the term is also used to designate the inkomstpension subsystem of the national public pension system. Like the premium pension system, the inkomstpension scheme is a defined-contribution pension system.

internal rate of return
<div align="right">internränta</div>

in this report, compounding of the pension liability so that it increases at the same rate as the assets of the system. The internal rate of return is determined by the change in the contribution revenue of the system and the change in the extent to which these contributions can finance the pension liability – in other words, the change in turnover duration – and by the return on the buffer fund, as well as the cost (gain) due to changes in life expectancy. If balancing is activated, the pension liability is compounded at a rate approximating the internal rate of return of the pay-as-you-go system.

National Pension Funds
<div align="right">AP-fonderna</div>

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
<div align="right">den allmänna pensionen</div>

Sweden's national pension system. The system comprises the inkomstpension, the premium pension and the guaranteed pension. The inkomstpension may also include the ATP.

old-age pension contribution
<div align="right">ålderspensionsavgift</div>

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 of total earnings; however, the contribution on the portion of income above the ceiling for contributions is not paid to the pension system, but to the central government.

pay-as-you-go pension systems
<div align="right">fördelningssystem</div>

systems which do not require that the pension liability be matched by a certain amount of funded assets. A pay-as-you-go system is often described as a system where contribution revenue is used directly to finance pension disbursements. However, this description is not totally accurate in the case of a pay-as-you-go system with a buffer fund.

pay-in duration
<div align="right">intjänandetid</div>

reflects 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

reflects 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 total confirmed pension credit for the inkomstpension, recalculated annually by the income index (or the balance index), inheritance gains and the charge for costs of administration.

pension base   pensionsunderlag

the total of an individual's pension-qualifying income and pension-qualifying amounts, but only up to the ceiling on pension-qualifying income.

pension contribution   pensionsavgift

see individual pension contribution, old-age pension contribution and central-government old-age pension contribution.

pension credit   pensionsrätt

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 credit increases the individual's pension balance and premium-pension capital.

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

the measure of pension credit used in calculating the ATP. Pension points may be earned by persons up to age 64 and born before 1954. Pension points are calculated as follows:

$$Pension\ points = \frac{PQI - HPBA}{HPBA}$$

where
PQI = pension-qualifying income
$HPBA$ = the higher price-related base amount

pension-qualifying amounts pensionsgrundande belopp

a basis for pension credit not related to actual earned income. Pension-qualifying amounts may be credited for sickness or activity compensation, years with small children, study and compulsory national service.

pension-qualifying income pensionsgrundande inkomst

the income which together with pension-qualifying amounts is used to calculate the pension credit of the insured. 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. Pension credit is granted only on income up to the ceiling on pension-qualifying income.

premium pension premiepension

the portion of the earnings-related old-age pension designed as a funded system. The pension credit earned for the premium pension is 2.5 percent of the pension base and is invested in securities funds chosen by the insured individual. The premium pension may be withdrawn as fund insurance or as a guaranteed nominal monthly benefit from a conventional insurance policy. Like the inkomstpension system, the premium pension system is a defined-contribution system.

price-related base amount* prisbasbelopp

an amount used in the national pension system for purposes that include calculating the guaranteed pension and in the tax system for determining the basic deduction, currently equivalent to 42.3 percent of one price-related base amount for the year in which the income reported was earned. The price-related base amount is adjusted each year by the change in the Consumer Price Index (for June). In addition there is a higher price-related based amount. It 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.

turnover duration omsättningstid

reflects the expected time from the earning of pension credit until the disbursement of 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.

The Orange Report – What Is It?

The Orange Report is the annual report of the Swedish pension system. The report describes the financial position, the development during the year and the future for the portion of the legislated pension system that provides a pension based on contributions paid in, as well as factors like the return on those contributions – in other words, the inkomstpension and the premium pension. The report also covers the legacy of the ATP. The Swedish Pensions Agency (before 2010 the Swedish Social Insurance Agency and the Premium Pension Authority, PPM) and the National Pension Funds are the authorities responsible for managing this pension system. The Swedish Tax Agency also plays an important part, in collecting contributions and in other ways.

Annual contributions and premiums paid for national, occupational and private pensions add up to SEK 363 billion – total earnings in Sweden were SEK 1,238 billion (including earnings of the self-employed). This means that we set aside the equivalent of 28 percent of our wages and salaries for various pensions.

The table and the diagrams show the distribution of premiums paid in, capital managed and pensions disbursed among the national pension, occupational pensions and private pensions.

To simplify, the Orange Report covers 64, 36 and 75 percent, respectively, of all pensions in Sweden. Thus, this report is appropriate reading both for those who wish to review the development of the national pension system and for those who would like to stay current more generally on pension-related issues in Sweden.

Orange Report and Sweden's Pensions in 2008

Billions of SEK

	Paid-in premiums	Capital managed Dec. 31	Disbursements	
● National pension	233	940 *	200 **	Orange Report
● Occupational pension	116	1,316	54 ***	
● Private pension insurance	14	387	14	
Total	363	2,643	268	

*   Contribution asset not included.
** Includes only income-related pensions. Aside from these, there are disbursements of the guaranteed pension (SEK 19 billion), widow's pension (SEK 15 billion), housing supplements to pensioners and income support for the elderly (SEK 8 billion) provided by the central government.
*** Refers to old-age pension..

Premiums	Capital	Pensions
64 %	36 %	75 %