also provide an indication of movements in household wealth. To date in 1998 house prices have risen 8 per cent. Stock exchanges around the world have been marked recently by turbulence and falling prices. In the past three years the Stockholm Exchange has risen very strongly. From the high this July, however, the index has fallen back to its level at the beginning of the year (Fig. 8).

Short-run fluctuations in share prices are no doubt of limited importance for the development of consumption but a deeper and more lasting fall could have some negative repercussions, in the first place via expectations. The pricing of OMX options shows that market agents see a further fall in share prices as more probable than a recovery (see box "Implied distributions of the OMX index" below).

IMPLIED DISTRIBUTIONS OF THE OMX INDEX

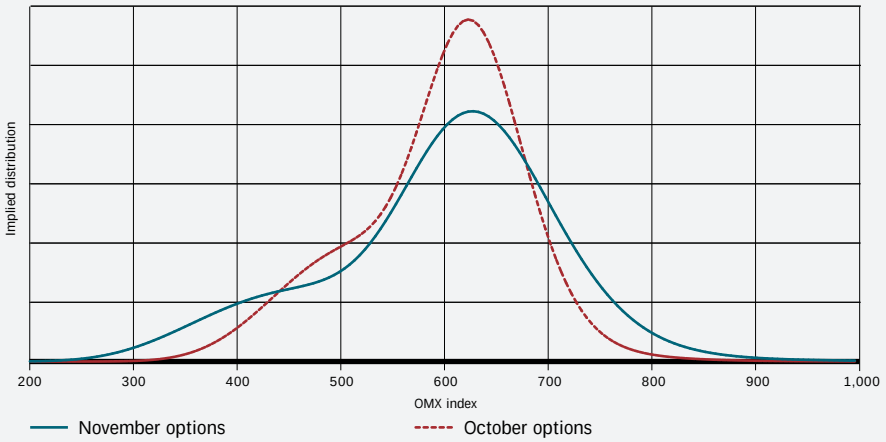
Prices of different derivative instruments[28] can be used to form a picture of market expectations of share prices. Given a sufficient number of option quotations with the same maturity, the probability distribution of the future share prices expected by market agents can be estimated to determine whether the probability of a price fall exceeds that of a price rise.

Such calculations have been done for the Swedish OMX index. As this index represents the thirty most traded shares (weighted for value) on the Stockholm Exchange, it should serve as a good indicator of market expectations for the Exchange as a whole. The method for estimating the implied distributions rests on an assumed form of the underlying distribution function.[29] Symmetric as well as skewed probability distributions can be derived and one can also pick out implied dis-

28 Financial instruments that are value-dependent on the price of one or more underlying assets. One example is options, which entitle but do not oblige the holder to buy or sell a particular asset within a given time period at an agreed price.

29 More specifically, a mixture of weighted log-normal distributions is used; for a fuller description of the method see Hördahl, P. (1998), *Implicita fördelningar för OMX-index* (Implied distributions of the OMX index), Method Memorandum, Sveriges Riksbank. Cf. also Melick, W.R. & Thomas, C.P. (1997), "Recovering an asset's implied PDF from option prices: an application to crude oil during the Gulf crisis", *J. of Financial and Quantitative Analysis, 32*, pp. 91—115.

Figure B10.
Implied distribution of OMX index on 23 October and 27 November 1998, calculated from option prices on 17 September 1998, when the index was at 598.1.



Source: The Riksbank.

tributions with a high probability for extreme values (distributions with "thick tails"). A further possibility is implied distributions that show two "peaks"; this can be very useful in situations where the market perceives relatively high probabilities for each of two very different scenarios.

The implied distributions in the OMX index on 23 October and 27 November 1998, estimated from option quotations on 17 September 1998, are shown in Fig. B10.[30] It will be seen that the spread of the implied distributions for the November options is greater than for the October options. This is natural in that the more distant the forecast horizon, the greater is the uncertainty about the outcome. Both distributions display a clearly negative skewedness—the tails to the left are longer and thicker than those to the right. This means that large price falls are judged to have a higher probability than large increases, which indicates that market agents are worried about a further drop in equity prices.

30 Note that the estimated distributions presuppose that the market agents are risk neutral.

The development of households' income, wealth and expectations points to good growth of private consumption in the coming years.

Households' personal economic expectations have continued to rise since the June Report and in spite of the recent turbulence, households are now optimistic in a historic perspective (Annex: Fig. 22).

An appreciable growth of household disposable income is foreseen in the forecast period. A number of factors are contributing to this: rising real wages, increased employment and less restrictive fiscal effects.

The overall assessment is that the upswing in private consumption is coming earlier and will be somewhat stronger than assumed in the June Report. The growth rate is therefore expected to be somewhat stronger in this and the coming year but somewhat weaker in 2000.

The household saving ratio fell in 1997 to 0.8 per cent. With the favourable development that is foreseen for disposable income, some increase in savings during the forecast period should be feasible notwithstanding the strong growth of consumption.

To sum up, compared with the June Report, private consumption is judged to be somewhat stronger in this and the coming year. In the main scenario the growth rate is expected to be almost 3 per cent this year, just over 3 per cent in 1999 and around 2.5 per cent in 2000.

SOME INCREASE IN PUBLIC CONSUMPTION

Fiscal policy is important for the construction of monetary policy for a number of reasons. In a cyclical perspective, fiscal policy affects the demand situation and thereby inflationary pressure. In a longer perspective, the fiscal position is of central importance because doubts about the long-term sustainability of government finances can have negative repercussions, for example in the form of a weaker exchange rate, that add to the risk of inflation.

The Spring Bill contained proposals for promoting local government employment that total the equivalent of SEK 4 billion annually in the period 1998—2001. In the June Report it was assumed that these efforts would have some impact before the end of 1998. The National Accounts show that the increase in local government consumption in the first half-year was unexpectedly strong, which suggests