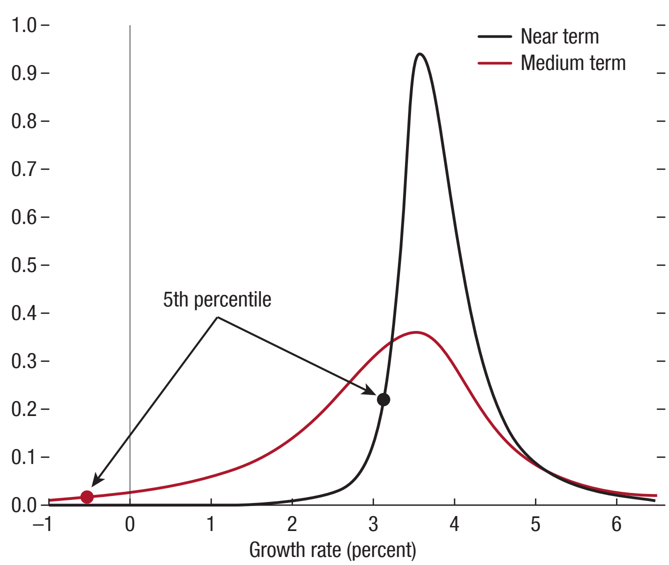
Figure 1.3. The Growth-at-Risk Approach

The growth-at-risk (GaR) approach links current financial conditions to the distribution of future growth outcomes. The forecasted range of severely adverse growth outcomes (those that occur with 5 percent probability, also called the "tail" of the distribution) provides a metric with which to assess the degree of concern about risks to growth and financial stability.

To illustrate how the GaR approach works, Figure 1.3 shows a stylized distribution of one-year-ahead growth forecasts (in black) and a stylized distribution of three-year-ahead growth forecasts (in red), conditional on current financial conditions and vulnerabilities. The medium-term growth distribution has a similar mode but a fatter left tail than the near-term growth distribution, which means that the downside risk is higher in the medium term than in the near term. Furthermore, if certain changes in financial conditions or vulnerabilities lead to a leftward shift of the forecasted growth distribution, this means that the downside risks to growth increase. For example, if a tightening of financial conditions results in a shift of the 5th percentile of the near-term growth distribution (shown by the black dot and referred to as the GaR threshold) further to the left, this implies that the GaR threshold below which growth could fall with 5 percent probability is lower and, hence, the downside "tail" risk to growth and financial stability is higher (for details, see the April 2018 GFSR).

Growth Forecast Distributions

(Probability density)



Source: IMF staff estimates.