



Risk tolerance questionnaire and scoring system

Distribution model — April 2022



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ADVISORS

Morningstar developed this risk tolerance questionnaire and scoring system for selecting the appropriate risk track (conservative or moderate) and age bracket for a family of distribution asset class models. The distribution glide path questionnaire and scoring system consists of 11 questions intended to gauge an investor's ability (Risk Capacity) and willingness (Risk Aversion) to accept risk. No single glide path is right for everyone. The two key dimensions that affect the glide path are Risk Capacity and Risk Aversion. The questionnaire helps investors establish a basis for selecting 1) the appropriate risk-based glide path and 2) the appropriate model based on the individual's saving goals.

Time horizon

Question	Answer	Response	Score
1 When do you expect to begin withdrawing money from your investment account?	a. I began withdrawing more than 15 years ago	a	0
	b. I began withdrawing between 5 and 14 years ago	b	5
	c. I began withdrawing less than 5 years ago	c	10
	d. I have not yet withdrawn funds, but expect to do so within 5 years	d	20
2 Once you begin withdrawing money from your investment account, how long do you expect the withdrawals to last?	a. I plan to take a lump-sum distribution	a	0
	b. 1 to 5 years	b	5
	c. 6 to 15 years	c	10
	d. 16 years or more	d	15

Risk capacity — human capital

Question	Answer	Response	Score
3 What percentage of your future income, during the distribution years for this goal, do you think will be covered by a defined benefit pension(s) and Social Security?	a. 0%	a	0
	b. 25%	b	3
	c. 50%	c	6
	d. 75%	d	9
	e. 100% (or more)	e	12

Question	Answer	Response	Score
4 How many more years do you anticipate to continue working once you start withdrawing money from your investment account?	a. I no longer work	a	0
	b. Less than 1 year	b	0
	c. 1 to 10 years	c	3
	d. 11 years or more	d	6

Risk capacity – financial wealth

Question	Answer	Response	Score
5 What percentage of assets do you have or anticipate having accumulated for your saving goal (this should include all assets that you intend to apply to this goal)?	a. Less than 50%	a	0
	b. Between 50 and 150%	b	8
	c. More than 150%	c	16

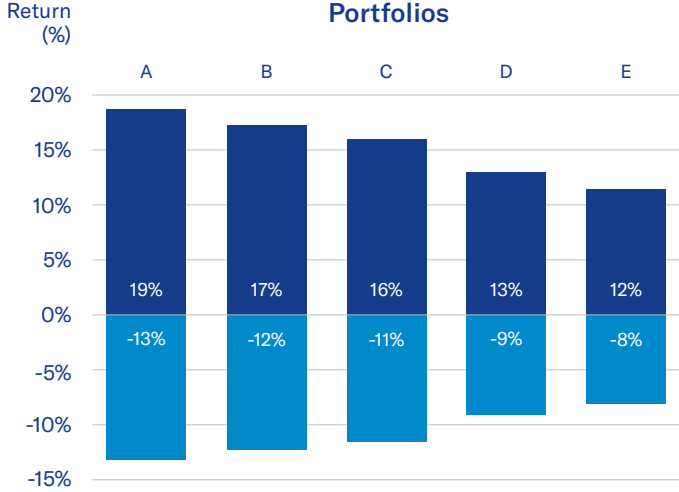
Risk aversion

Question	Answer	Response	Score
6 Which of the following choices best reflects your attitude toward inflation and risk?	a. My main goal is to avoid loss, even though I may only keep pace with inflation.	a	0
	b. My main goal is to earn slightly more than inflation, while taking on a low level of risk.	b	3
	c. My main goal is to increase my portfolio's value. Therefore, I am willing to accept short-term losses, but I am not comfortable with extreme performance shifts that may be experienced in the most aggressive investment options.	c	7
	d. My main goal is to maximize my portfolio value, and I am willing to take on more extreme levels of risk and performance shifts in my portfolio to do so.	d	10

Question	Answer	Response	Score																								
<p>7 The table shown presents a potential best-case result, probable result and potential worst-case result of five sample portfolios over a 1-year period with an initial \$10,000 investment. Understanding the potential upsides and downsides of each portfolio, which portfolio would you prefer to hold?</p>	<table border="1"> <thead> <tr> <th></th> <th>Potential best case (\$)</th> <th>Probable gain (\$)</th> <th>Potential worst case (\$)</th> </tr> </thead> <tbody> <tr> <td>a. Portfolio 1</td> <td>\$11,047</td> <td>\$10,280</td> <td>\$9,286</td> </tr> <tr> <td>b. Portfolio 2</td> <td>\$11,162</td> <td>\$10,308</td> <td>\$9,210</td> </tr> <tr> <td>c. Portfolio 3</td> <td>\$11,296</td> <td>\$10,335</td> <td>\$9,113</td> </tr> <tr> <td>d. Portfolio 4</td> <td>\$11,600</td> <td>\$10,387</td> <td>\$9,113</td> </tr> <tr> <td>e. Portfolio 5</td> <td>\$11,735</td> <td>\$10,412</td> <td>\$8,792</td> </tr> </tbody> </table>		Potential best case (\$)	Probable gain (\$)	Potential worst case (\$)	a. Portfolio 1	\$11,047	\$10,280	\$9,286	b. Portfolio 2	\$11,162	\$10,308	\$9,210	c. Portfolio 3	\$11,296	\$10,335	\$9,113	d. Portfolio 4	\$11,600	\$10,387	\$9,113	e. Portfolio 5	\$11,735	\$10,412	\$8,792		
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<p>8 Investing involves a trade-off between risk and return. Which statement best describes your investment goals?</p>	<p>a. Protect the value of my account. In order to minimize the chance for loss, I am willing to accept the lower long-term returns provided by conservative investments.</p> <p>b. Keep risk to a minimum while trying to achieve slightly higher returns than the returns provided by investments that are more conservative.</p> <p>c. Focus more on the long-term investment returns. Long-term growth is equally as important as managing portfolio risk.</p> <p>d. Maximize long-term investment returns. I am willing to accept large and sometimes dramatic short-term fluctuations in the value of my investments.</p>																										
<p>9 Historically, markets have experienced downturns, both short term and prolonged, followed by market recoveries. Suppose you owned a well-diversified portfolio that fell by 20 over a short period, consistent with the overall market.</p>	<p>Example:</p> <ul style="list-style-type: none"> • \$10,000 initial investment would now be worth \$8,000 • \$100,000 initial investment would now be worth \$80,000 <p>Assuming you still have 10 years until you begin withdrawals, how would you react?</p> <p>a. I would change to investments that are more aggressive.</p> <p>b. I would not change my portfolio.</p> <p>c. I would wait at least 1 year before changing to options that are more conservative.</p> <p>d. I would immediately change to options that are more conservative.</p>																										

Question	Answer	Response	Score
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10 The following graph shows the hypothetical best and worst results of five sample portfolios over a **1-year** holding period. Note the portfolio with the highest upside also has the largest downside. Which of these portfolios would you prefer to hold?



- a 10
- b 8
- c 5
- d 2
- e 0

11 I am comfortable with investments that may frequently experience large declines in value if there is a potential for higher returns. Does this describe you?

- a. Strongly disagree
- b. Disagree
- c. Agree

- a 0
- b 8
- c 16

Questionnaire scoring system

Overview

In recommending the proper glide path, the responses from the previous questions must be analyzed. The scores for the above categories will be collected at the end of this document for use in an accompanying portfolio selector booklet. The path in determining the portfolio will mimic the order of the data collection.

Time horizon score

The time horizon portion of the scoring is taken from questions 1 and 2. The score on these two questions determines the time horizon level. The time horizon level is used to assign various time horizon factors. Each investor is assigned a *time horizon level*.

Each time horizon level gives the investor access to certain portfolios and restricts the investor's access to others. Investors that score into the shorter time horizon levels are not given access to the more aggressive portfolios. This is consistent with Ibbotson's belief that individuals with shorter-term horizons should hold more conservative portfolios.

Within each time horizon level, Morningstar allows an investor's risk tolerance to determine the appropriate portfolio. If an investor's risk tolerance suggests a portfolio that is restricted (due to the time horizon level), Morningstar recommends a more appropriate portfolio for that investor's specific time horizon level. This process allows conservative investors with short time horizons to score into a portfolio matched to their risk tolerance while at the same time protecting aggressive investors with short time horizons from excess risks.

Time horizon score _____

Risk capacity score

An investor's risk capacity is gauged in questions 3-5. Morningstar takes into consideration both a participant's financial wealth and human capital in determining their ability to assume risk in a portfolio.

Each risk capacity level gives the investor access to certain glide paths and restricts the investor's access to others. Investors who score into the lower risk capacity levels are not given access to the moderate glide path. This is consistent with Morningstar's belief that individuals with low risk capacity should hold conservative portfolios.

Risk capacity score _____

Risk aversion score

The risk aversion score comes from questions 6-11 on the questionnaire. Morningstar assigns a point value to each response according to the investor's risk aversion. The highest points are awarded to the most aggressive answer choice.

If an investor answers the question by selecting only the most conservative option, their risk aversion score will be zero (0). If the selected answer is the most aggressive response, the risk Aversion score will be 66.

Morningstar uses the total score to determine the appropriate glide path for a participant. Specifically, participants need to score high on either Risk Capacity or Risk Aversion and no lower than average on the other for Morningstar to recommend the moderate glide path. Similarly, an investor also needs to score low on one criterion and no higher than average on the other for Morningstar to recommend the conservative glide path. This process allows conservative investors with low Risk Capacity to score into a glide path matched to their Risk Aversion while at the same time protecting aggressive investors with low Risk Capacity from excess risks.

Glide path score (risk capacity + risk aversion)

Each section is scored separately, and then combined to form a total score. Ibbotson uses the total score to make the glide path recommendation. The two factors are scored equally so that Risk Capacity and Risk Aversion will have equal effect on selecting the appropriate glide path. The sections below discuss this process.

The risk aversion level is comprised of many different concepts uncovered by behavioral economists in recent decades, including loss aversion, risk/reward trade-off, inflation risk and the ability to stay the course. An investor who feels uncomfortable with extreme volatility or the possibility of large losses to their portfolio is placed in a more conservative option, while an investor who is willing to accept greater risk is placed in a more aggressive option.

Glide path score = Risk capacity score _____ + Risk aversion score _____

Recommending a portfolio

The summary scoring grid below facilitates the final portfolio recommendation process by combining the time horizon and risk aversion scores. To use the scoring grid, find the time horizon score on the horizontal axis and the risk aversion score on the vertical axis. The intersection of these two points is the recommended portfolio.

Summary scoring grid

Glide path score	Time horizon score		
	0-15	16-25	26-35
0-50	Conservative Short	Conservative Intermediate	Conservative Long
51-100	Moderate Short	Moderate Intermediate	Moderate Long

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