CHAPTER 14

IN THE LONG TERM… MYTHS ABOUT MARKETS

Sarah was a patient woman. She believed that good things came to those who waited long enough, and she was therefore not upset when she opened up the statements from her broker and discovered that she had lost 20% over the previous year on her pension fund investments. “It is only a paper loss,” she told herself, “and stocks always come back in the long term.” In fact, she had read somewhere that stocks had never done worse than bonds over any ten-year period in history and that stocks tended to bounce back after bad years. Since she had thirty years left to retirement, she did not feel worried about her losses.

Sarah’s faith in the long term was shaken when she talked to her good friend, Kazumi Kawamoto. Kazumi had grown up in Japan and had been saving for retirement in the Japanese stock market. She had accumulated a substantial amount in her portfolio by 1989 and was looking forward to early retirement a decade later. Unfortunately, the market plummeted in the 1990s and her portfolio declined in value by 75% over the next 15 years. Comforted at every stage by brokers who told her that stocks always won in the long term, Kazumi was now confronted with the reality that she would never make her money back and that early retirement was not an option. Realizing that stocks can lose even in the very long term, Sarah moved some of her retirement money into bonds.

*Moral:* Stocks don’t always win in the long term.

The chapters so far have looked at sales pitches that revolve around picking the best stocks in the market but the most powerful investment myths in investing are about the overall stock market. In this chapter, you will consider a few of these myths and the damage that believing in them can do to investors. The first and most deadly myth is that stocks always beat bonds in the long term. Following this line of reasoning, stocks become riskless to investors with long time horizons. The second myth is that market timing beats stock picking when it comes to stock returns. Buying into this belief, investors spend far more time than they should thinking about which way the market is going to move and too little picking the right stocks for their portfolios. The third myth is that market timing is easy to do and that there are lots of investors who are successful market timers.

The Core of the Story

Hindsight is the most powerful weapon in the arsenal of those selling market timing. Consider, they say, how much money you could have made if you had bought into the
NASDAQ in 1992 and got out at the end of 1999. The essence of market timing is that it lets you capture upside risk, and avoid the downside risk. This section will look at three widely made claims about timing equity markets.

**Stocks always win in the long term**

There are many investment advisors and experts who claim that while stocks may be risky in the short term, they are not in the long term. In the long term, they argue, stocks always beat less risky alternatives. As evidence, they point to the history of financial markets in the United States and note that stocks have earned a higher return than corporate or treasury bonds over any twenty-year period that you look at since 1926. They then draw the conclusion that if you have a long enough time horizon (conservatively, this would be 20 years), you will always generate a higher ending portfolio value investing in stocks than in alternatives.

It is not just individual but also professional investors who have bought into this sales pitch. Following these pied pipers of equity, younger workers have invested all of their pension fund savings in stocks. After all, a 35 year-old investor will not be accessing her pension fund investment for another 30 years, a time horizon that should make stocks essentially riskless. Companies have reconfigured the contributions they make to pension plans on the assumption that pension plans will be invested predominantly or entirely in equities. By making this assumption of higher equity returns, they are able to lower their contributions and report higher earnings. State and local governments have used the same assumptions to meet budget constraints.

Aggravating the problem is the shifting definition of long term. While a conservative advisor may mean 20 years or longer when he talks about long term, more aggressive investors and advisors reduce this number, arguing that while stocks may not beat bonds over every 5-year or 10-year period in history, they come out ahead so often (again based upon the data from the U.S. equity markets in the twentieth century), they are safe. During bull markets, investors are all too willing to listen and invest a disproportionately large amount of their savings, given their ages and risk preferences, in equities. It should come as no surprise that books and articles pushing the dominance of equity as an investment class peaked in 1999 at the height of one of the great bull markets of all time.
Market timing trumps stock selection

In a 1986 article, a group of researchers raised the shackles of many an active portfolio manager by estimating that as much as 93.6% of the variation in quarterly performance at professionally managed portfolios could be explained by asset allocation, i.e., the mix of stocks, bonds and cash at these portfolios. A different study in 1992 examined the effect on your annual returns of being able to stay out of the market during bad months. It concluded that an investor who would have missed the 50 weakest months of the market between 1946 and 1991 would have seen her annual returns almost double from 11.2% to 19%. In an assessment of the relative importance of asset allocation and security selection of 94 balanced mutual funds and 58 pension funds, all of which had to make both asset allocation and security selection decisions, about 40% of the differences in returns across funds could be explained by asset allocation decisions and 60% by security selection. When it comes to the level of returns, almost all of the returns can be explained by the asset allocation decision. Collectively, these studies suggest that the asset allocation decision has important consequences for your returns, and its importance increases with your time horizon.

While how much of actual portfolio returns are due to asset allocation is open to debate, there can be no denying that market timing has a much bigger and speedier payoff than stock selection. It should come as no surprise that investors who have been disappointed with their stock selection skills turn to or at least try market timing in the hope of earning these high returns. Professional money managers are not immune from the allure of market timing either. To the extent that mutual fund managers believe that they can time stock markets, they will adjust how much they hold in cash and stocks. Thus, a portfolio manager who believes that the stock market is over valued and is ripe for a correction will hold a substantial portion of her portfolio in cash.

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2 This is a much quoted and misquoted study. A survey by Nutall and Nutall found that of 50 writers who quoted this study, 37 misread it to indicate that 93% of the total return came from asset allocation. (Nuttall, J.A. and J. Nuttall, 1998, Asset Allocation Claims - Truth or Fiction?, Working Paper.)
Market timing works

There is a widely held belief that there are lots of indicators that predict future market movements. Some of these indicators are crude but have popular appeal. A common example shows up every January around the time of the Super Bowl. If a team from the old American Football Conference wins the Super Bowl, you will be told, it will be a bad year for the stock market. Other indicators are more sophisticated and follow economic logic. If markets are driven by the economy and interest rates, it seems logical that you should be able to use the level of interest rate or the rate of growth in Gross Domestic Product to forecast what will happen to the market in the following period. Still others are based upon extending measures that work for individual companies. If companies that trade at low multiples of earnings are cheap, then markets that trade at low multiples of earnings, relative to other markets or their own history, must also be cheap. Whatever the indicator, though, the underlying thesis is that it can be used to decide when to go into stocks and when to get out.

Closely linked to these indicators is the assumption that there are other investors out there who are successful at market timers. This explains the attention that market strategists at investment banks attract when they come out with their periodic views on the right asset allocation mix; the more bullish (bearish) a strategist, the greater (lesser) the allocation to equities. This also explains why the dozens of investment newsletters dedicated to market timing continue to prosper.

Why are so many investors willing to believe that market timing works? It may be because it is so easy to find market-timing indicators that work on past data. If you have a great deal of historical data on stock prices and a powerful enough computer, you could potentially find dozens of indicators (out of the hundreds that you try out) that seem to work. Using the same approach, most market timing newsletters purport to show that following their investment advice would have generated extraordinary returns on hypothetical portfolios over time. It may also be because professional market timers are masters at self-promotion, telling everyone in the market when they are right and fading into the background when they are wrong.

Evidence

To examine the myths about market timing, you have to look at history. Organized equity markets in the United States have been around for more than a century and it is not surprising that much of the work done on market timing is based upon looking at their performance. This section will look at how stocks have done, relative to alternative investments over very long periods. It will follow up by looking at whether the indicators
that purport to time markets and the investors who claim to be market timers actually are successful.

**Do stocks always win in the long term?**

Consider what all investors are told about investing in stocks. If you have a short time horizon, say a year or less, stocks will generate higher expected returns but they are also far riskier than bonds. The risk implies that stocks can do much worse than bonds during the period. If you have a longer time horizon, stocks supposedly become less risky; you can have a bad year where stocks do badly but there will be good years where they more than compensate. Over these longer time horizons, you will be told that stocks almost always do better than less risky alternatives.

This story clearly has some intuitive appeal but does the evidence back it up? The answer provided by those who tell this story is to point to the equity market returns in the United States over the twentieth century. In fact, the most widely used equity market data for the United States comes from a service in Chicago called Ibbotson Associates and covers the U.S. equity market from 1926 to the present. Ibbotson’s data suggests that stocks, on average, have about 6 to 7% more than treasury bonds and bills during this period.

To take a closer and more detailed look at equity returns, the period was extended to go back to 1871 and stock returns were examined through the present\(^5\). Figure 14.1 presents the year-by-year equity returns for the entire period:

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\(^{5}\) This analysis was made possible the excellent data provided on Robert Shiller’s web site.
Figure 14.1: Stock Returns in the United States; 1871-2002

Data from Professor Shiller’s web site. These are the annual returns on stocks from 1871 to 2002.

While stocks, across the period, have been on winners, there have been extended periods of market malaise and very negative returns – the early 1930s and the 1970s- and there are many years of negative stock returns. In fact, stock market returns are negative in about one out every four years and are lower than the treasury bill rate one out of every three years.

Proponents of stocks would point out that stocks are risky in the short term but that they are not in the long term. Using 10-year holding periods, the compounded annual returns were computed for every 10-year period beginning in 1871. To allow for the fact that investors could begin investing in any of the intermediate years, overlapping 10-year periods are considered: 1871-81, 1872-82 and so on until 1992-2002. There are 121 overlapping 10-year periods between 1871 and 2002. Figure 14.2 presents the distribution of the compounded annual returns you would have earned over 10-year periods investing in stocks and treasury bills.
Stocks are more likely to earn high annual returns but they are also more volatile.

Data from Shiller. The number of years in which returns fell into each return class between 1871 and 2002 is reported for both stocks and treasury bills.

Over ten-year periods, the risk of stocks is smoothed out. There were only two ten-year periods between 1871 and 2002 where the annual return is negative. The contrast in risk between stocks and treasury bills is also visible in Figure 14.2. Treasury bill returns are centered around 4-5%, with the worst 10-year period generating annual returns of between 0 and 1% and the best 10-year period generating annual returns of between 10 and 11%; the best 10-year periods for stocks deliver annual returns in excess of 15%.

Comparing stock returns to bill returns in each 10-year period allows you to make a judgment of the two investment alternatives. In Figure 14.3, the differences in compounded annual returns on stocks and bonds in every 10-year period from 1871 to 2002 are examined to see how often equities deliver higher returns than bills.
Figure 14.3: Stock Returns versus Treasury Bill Returns: Annual returns over 10-year periods

<table>
<thead>
<tr>
<th>Number of 10-year periods</th>
<th>Annualized 10-year stock return - 10-year bond return</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1% higher</td>
<td>1871-2002</td>
</tr>
<tr>
<td>1-2% higher</td>
<td>1871-1926</td>
</tr>
<tr>
<td>2-3% higher</td>
<td>1926-2002</td>
</tr>
<tr>
<td>3-4% higher</td>
<td>1871-2002</td>
</tr>
<tr>
<td>4-5% higher</td>
<td>1871-1926</td>
</tr>
<tr>
<td>5-6% higher</td>
<td>1926-2002</td>
</tr>
<tr>
<td>6-8% higher</td>
<td>1871-2002</td>
</tr>
<tr>
<td>8-10% higher</td>
<td>1871-1926</td>
</tr>
<tr>
<td>&gt;10% higher</td>
<td>1926-2002</td>
</tr>
</tbody>
</table>

Data from Shiller. This is the difference between the compounded 10-year returns on stocks and the returns on bills computed each year from 1871 and 2002.

There are ninety-five 10-year periods between 1871 and 2002 where stocks have outperformed bills and twenty-six 10-year periods where treasury bills have outperformed stocks. Thirteen of these twenty-six periods occur between 1871 and 1926. Since 1945, there has been only one stretch of time during the 1970s where stocks have underperformed treasuries.

In summary, there is substantial evidence that stocks in the United States have delivered higher returns than treasury bonds or bills over long time periods, but there are no guarantees. If you consider the longer history of stock and bill returns going back to 1871, stocks do worse than bonds even over 10-year periods about 20% of the time.

**Market Timing Works**

Most equity investors continue to believe that they can time markets. A substantial portion of the financial press every day is dedicated to presenting the views of market strategists and experts on the future direction of equity markets. In addition, there are

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6 Stocks did worse than T.Bills in terms of annual returns each of the 10-year periods ending in the late seventies (1974-1980).
dozens of market timing indicators that investors subscribe to, hoping to gain the elusive edge. In this section, you will review the evidence first on market timing indicators and whether they work and then look at the performance of market timers – portfolio managers, market strategists and investment newsletters.

**Market Timing Indicators**

Market timing indicators run the gamut. At one end of the spectrum are non-financial indicators such as using the winner of the Super Bowl to forecast market movements. At the other end are models that apply to entire markets valuation metrics like PE that are used to price individual stocks. In the middle, are approaches that track trading volume and price patterns – the tools of chartists – to make predictions about future market movements.

**Non financial indicators**

Through the decades, there are some investors who have claimed to foretell the market’s future by looking at non-financial indicators. Some of these indicators, such as whether the NFC or AFC team wins the Super Bowl are clearly of dubious origin and would fall into a category titled spurious indicators. Other indicators such as the hemline index, which relates stock prices to the length of hemlines on skirts, fall into the grouping of “feel good indicators” that measure the overall mood of people in the economy, who after all are both the consumers who act as the engine for the economy and the investors determining prices. Finally, there are the “hype indicators” that measure whether market prices are becoming disconnected from reality.

*a. Spurious Indicators*

Millions of investors track what happens to their stocks and to the market every day and it is not surprising that they find other occurrences that seem to predict what the market will do in the next period. Consider one very widely talked-about indicator – who wins the Super Bowl. 7 In the 35 years that the Super Bowl has been played from 1966 to 2001, the winner has come from the National Football Conference (or is an old pre-merger NFL team like the Steelers or Colts) 25 years, and the market has risen in 22 out of the 25 years. In the 10 years that an American Football Conference team has won, the market has fallen seven

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7 For those unfamiliar with the Super Bowl, it is played between the winner of the American Football Conference (AFC) and the winners of the National Football Conference (NFC). It is played on the last Sunday in January.
times. In fact, there are academic researchers who claim that the success rate of 83% (29 out of 35 years) is far too high to be due to chance.  

So why not invest in the market after observing who wins the Super Bowl? There are several potential problems. First, it is not true that chance cannot explain this phenomenon. When you have hundreds of potential indicators that you can use to time markets, there will be some that show an unusually high correlation purely by chance. Second, a forecast of market direction (up or down) does not really qualify as market timing, since how much the market goes up clearly does make a difference. Third, you should always be cautious when you can find no economic link between a market timing indicator and the market. There is no conceivable reason why the winner of the Super Bowl should affect or be correlated with overall economic performance. Indicators such as these may make for amusing anecdotes at parties but can be lethal to your portfolio as market timing devices.

b. Feel Good Indicators

When people feel optimistic about the future, it is not just stock prices that are affected by this optimism. Often, there are social consequences as well, with styles and social mores affected by the fact that investors and consumers feel good about the economy. In the 1920s, you had the Great Gatsby and the go-go years, as people partied and the markets zoomed up. In the 1980s, in another big bull market, you had the storied excesses of Wall Street, documented in books like Liars Poker and movies like Wall Street. It is not surprising, therefore, that people have discovered linkages between social indicators and Wall Street. Consider, for instance, an index that has been around for decades called the hemline index that finds a correlation between the hemlines on women’s skirts and the stock market. This politically incorrect index is based on the notion that shorter dresses and skirts are associated with rising stock prices whereas longer dresses are predictors of stock market decline. Assuming the index works, you would argue that you are seeing a manifestation of the same phenomenon. As people get more upbeat, fashions do seem to get more daring (with higher hemlines following) and markets also seem to go up. You could undoubtedly construct other indices that have similar correlations. For instance, you should expect to see a high correlation between demand at highly priced restaurants at New York City (or wherever young investment bankers and traders go to celebrate) and the stock market.

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The problem with feel good indicators, in general, is that they tend to be contemporaneous or lagging rather than leading indicators. In other words, the hemlines don’t drop before the markets drop but in conjunction with or after a market drop. As an investor, these indicators are off little use, since your objective is to get out before the market drops and to get in before the market goes up.

c. Hype Indicators

It is said that Joseph Kennedy, a well-known speculator on stocks in his own time, knew it was time to get out of the market when he heard his shoeshine boy talking about stocks. In the present time, there are some who believe that the market peaked when financial channel CNBC’s ratings exceeded those of long-running soap operas. In fact, one recent indicator called the “cocktail party chatter” indicator tracks three measures – the time elapsed at a party before talk turns to stocks, the average age of the people discussing stocks and the fad component of the chatter. According to the indicator, the less time it takes for the talk to turn to stocks, the lower the average age of the market discussants and the greater the fad component, the more negative you should be about future stock price movements.

If you consider how stock market bubble forms, propagation is critical to bubbles getting bigger. In the media world, this will involve print, television and the internet and an overflow into day-to-day conversations. Thus, the discussion at the water cooler in a typical business is more likely to be about stocks than about football or other such daily (and more normal) obsessions, when markets are buoyant.

While hype indicators, of all non-financial indicators, offer the most promise as predictors of the market, they do suffer from several limitations. For instance, defining what constitutes abnormal can be tricky in a world where standards and tastes are shifting – a high rating for CNBC may be indicate too much market hype or may be just reflecting of the fact that viewers find financial markets to be both more entertaining and less predictable than a typical soap opera. Even if you decide that there is an abnormally high interest in the market today and you conclude (based upon the hype indicators) that stocks are over valued, there is no guarantee that stocks will not get more overvalued before the correction occurs. In other words, hype indicators may tell you that a market is overvalued, but they don’t tell you when the correction will occur.

Market Timing based upon Technical Indicators

There are a number of chart patterns and technical indicators used by analysts to differentiate between under and over valued stocks. Many of these indicators are also used by analysts to determine whether and by how much the entire market is under or over valued. In this section, you consider some of these indicators.
Past Prices

In earlier chapters, you looked at the evidence of negative long term correlation in stock prices – stocks that have gone up the most in recent periods are more likely to go down in future periods. The research does not seem to find similar evidence when it comes to the overall market. If markets have gone up significantly in the most recent years, there is no evidence that market returns in future years will be negative. If you consolidate stock returns from 1871 to 2001, into five-year periods, you find a positive correlation of .2085 between five-year period returns – in other words, positive returns over the last five years are more likely to be followed by positive returns than negative returns in the next five years. In Table 14.1, the probabilities of an up-year and a down-year following a series of scenarios, ranging from two down years in a row to two up years in a row, based upon actual stock price data from 1871 to 2001, are reported.

Table 14.1: Market Performance: 1871-2001

<table>
<thead>
<tr>
<th>Priors</th>
<th>Number of occurrences</th>
<th>In following year</th>
<th>Return on the Stock Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>After two down years</td>
<td>19</td>
<td>57.90%</td>
<td>2.95%</td>
</tr>
<tr>
<td>After one down year</td>
<td>30</td>
<td>60.00%</td>
<td>7.76%</td>
</tr>
<tr>
<td>After one up year</td>
<td>30</td>
<td>83.33%</td>
<td>10.92%</td>
</tr>
<tr>
<td>After two up years</td>
<td>51</td>
<td>50.98%</td>
<td>2.79%</td>
</tr>
</tbody>
</table>

It is true that markets are more likely to go down after two years of positive performance than under any other scenario, but there is also evidence of price momentum, with the odds of an up year increasing if the previous year was an up year. Does this mean that you should sell all your stocks after two good years? Not necessarily, for two reasons. First, the probabilities of up and down years do change but note that the likelihood of another good year remains more than 50% even after two consecutive good years in the market. Thus, the cost of being out of the market is substantial with this market timing strategy. Second, the fact that the market is overpriced does not mean that all stocks are over priced. As a stock picker, you may be able to find under valued stocks even in an over priced market.

Another price-based indicator that receives attention at least from the media at the beginning of each calendar year is the January indicator. The indicator posits that as January goes, so goes the year – if stocks are up in January, the market will be up for the
year, but a bad beginning usually precedes a poor year. According to the venerable Stock Trader’s Almanac that is compiled every year by Yale Hirsch, this indicator worked 88% of the time in the twentieth century. Note, though that if you exclude January from the year’s returns and compute the returns over the remaining 11 months of the year, the signal becomes much weaker and returns are negative only 50% of the time after a bad start in January. Thus, selling your stocks after stocks have gone down in January may not protect you from poor returns.

Trading Volume

There are some analysts who believe that trading volume can be a much better indicator of future market returns than past prices. Volume indicators are widely used to forecast future market movements. In fact, price increases that occur without much trading volume are viewed as less likely to carry over into the next trading period than those that are accompanied by heavy volume. At the same time, very heavy volume can also indicate turning points in markets. For instance, a drop in stocks with very heavy trading volume is called a selling climax and may be viewed as a sign that the market has hit bottom. This supposedly removes most of the bearish investors from the mix, opening the market up presumably to more optimistic investors. On the other hand, an increase in stocks accompanied by heavy trading volume may be viewed as a sign that market has topped out. Another widely used indicator looks at the trading volume on puts as a ratio of the trading volume on calls. This ratio, which is called the put-call ratio is often used as a contrarian indicator. When investors become more bearish, they sell more puts and this (as the contrarian argument goes) is a good sign for the future of the market.

Technical analysts also use money flow, which is the difference between the trading volume when stock prices increase (uptick volume) and trading volume when stock prices decreases (downtick volume), as predictor of market movements. An increase in the money flow is viewed as a positive signal for future market movements whereas a decrease is viewed as a bearish signal. Using daily money flows from July 1997 to June 1998, one study finds that stock prices tend to go up in periods where money flow increases, which is not surprising. While they find no predictive ability with short period returns – five day returns are not correlated with money flow in the previous five days – they do find some

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9 Note that there are narrower versions of the January indicator, using just the first 5 or 10 days of January.
predictive ability for longer periods. With 40-day returns and money flow over the prior 40 days, for instance, there is a link between high money flow and positive stock returns.

If you extend this analysis to global equity markets, you find that equity markets show momentum – markets that have done well in the recent past are more likely to continue doing well, whereas markets that have done badly remain poor performers.\textsuperscript{11} However, the momentum effect is stronger for equity markets that have high trading volume and weaker in markets with low trading volume.

\textit{Volatility}

In recent years, a number of studies have uncovered a relationship between changes in market volatility and future returns. One study finds that increases in market volatility cause an immediate drop in prices but stock returns increase in subsequent periods.\textsuperscript{12} It came to this conclusion by assessing daily price volatility from 1897 through 1988 and looking for time periods where the volatility has increased or decreased significantly, relative to prior periods.\textsuperscript{13} The returns both at the time of the volatility change and in the weeks following for both volatility increases and decreases are summarized in Figure 14.4:


\textsuperscript{13} Daily price volatility is estimated over four week windows. If the volatility in any four week window exceeds (falls below) the volatility in the previous four-week window (at a statistical significance level of 99\%), it is categorized as an increase (decrease) in volatility.
Data from Haugen, Talmor and Torous. The returns are computed in the four weeks prior to and after significant changes in stock market volatility.

Note that volatility increases cause stock prices to drop but that stock prices increase in the following four weeks. With volatility decreases, stock prices increase at the time of the volatility change, and they continue to increase in the weeks after, albeit at a slower pace.

Does this mean that you should buy stocks after an increase in volatility? Not necessarily. The increase in returns in the weeks following a volatility increase may just reflect the reality that stocks are riskier. However, if you believe that a surge in volatility is temporary and that stock volatility will revert back to normal levels, a strategy of buying stocks after an increase in equity market volatility may bear fruit.

**Other Technical Indicators**

There are a number of non-price indicators that are used by analysts to forecast future market movements. As with stock-specific technical indicators, market-wide indicators are often used in contradictory ways by momentum and contrarian analysts, with an increase in a specific indicator being viewed as bullish by one group and bearish by the other:

- **Price indicators** include many of the pricing patterns that are used by chartists to analyze individual stocks. Just as support and resistance lines and trend lines are
used to determine when to move in and out of individual stocks, they can also used to decide when to move in and out of the stock market.

- **Sentiment indicators** try to measure the mood of the market. One widely used measure is the confidence index which is defined to be the ratio of the yield on BBB rated bonds to the yield on AAA rated bonds. If this ratio increases, investors are becoming more risk averse or at least demanding a higher price for taking on risk, which is negative for stocks. Another indicator that is viewed as bullish for stocks is aggregate insider buying of stocks. When this measure increases, according to its proponents, stocks are more likely to go up.\(^\text{14}\) Other sentiment indicators include mutual fund cash positions and the degree of bullishness among investment advisors/newsletters. These are often used as contrarian indicators – an increase in cash in the hands of mutual funds and more bearish market views among mutual funds are viewed as bullish signs for stock prices.\(^\text{15}\)

While many of these indicators are used widely, they are mostly backed with anecdotal rather than empirical evidence.

**Market Timing based upon Normal Ranges (Mean Reversion)**

There are many investors who believe that prices tend to revert back to what can be called normal levels after extended periods where they might deviate from these norms. With the equity market, the normal range is defined usually in terms of price earnings (PE) ratios. Buy if the PE drops below 12 and sell if it rises above 18. You will see variations of this advice in many market timing newsletters. A more academic version of this argument was made by Campbell and Shiller who looked at PE ratios from 1871 to recent years and concluded that stocks revert back to a PE ratio of about 16 times normalized earnings. They defined normalized earnings as the average earnings over the previous 10 years. The implicit belief here is that there is a normal range for PE ratio and that if the PE rises above the top end of the range, stocks are likely to be overvalued, whereas if they fall below the bottom of the range, they are likely to be undervalued. While the approach is straightforward, where

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\(^\text{15}\) See “Investor sentiment and Stock Returns’ by Fisher and Statman, Financial Analysts Journal, March/april 2000. They examined three sentiment indicators – the views of Wall Street strategists, investment newsletters and individual investors - and concluded that there is indeed evidence supporting a contrarian investment strategy.
does the normal range of PE ratios come from? In most cases, it seems to come from looking at history and attaching a subjective judgment on the upper and lower limits.

Consider Figure 14.5, which presents PE ratios for the S&P 500 going back to 1960.

*Figure 14.5: PE Ratio for S&P 500: 1960-2001*

An attempt was made to draw a normal range for interest rates in the United States, based upon history, though it indicates the subjective judgments that you have to make along the way. Based upon this band, stocks would be considered as overvalued if they traded at a PE ratio greater than 22 and undervalued if they traded at a PE less than 12.

The limitations of this approach should be obvious. In addition to trusting history to repeat itself, you are making two other assumptions. The first is that you can identify a normal trading range by looking at historical data. As you can see from the graph, you will not get any consensus – someone else looking at this graph might end up with a different band for PE. The second assumption is that the fundamentals have not shifted significantly over time. If interest rates are much lower today than they have been historically, you should expect stocks to trade at much higher PE ratios than they have historically. It is dangerous to make investment and market timing decisions, under such scenarios, based upon the premise that PE ratios are higher or lower than a normal range.
Market Timing based upon Fundamentals

Just as the prices of individual stocks must reflect their cashflows, growth potential and risk, entire markets (equity, bond and real asset) have to reflect the fundamentals of these assets. If they do not, you can argue that they are misvalued.. You can try to time markets by developing simple signals based upon the level of interest rates or the strength of the economy. In this section, you will consider these signals – some old and some new – that have been used by portfolio managers as market timing tools.

Short Term Interest rates

Buy stocks when short-term interest rates (treasury bills) are low and sell them when short term rates are high, or so goes the conventional wisdom. But is there a basis to this advice? Looking back at history, there is little evidence of any predictive power in the level of rates. Stock prices are just as likely to go up in years when short term rates are low as they are in years when short term rates are high. There is, however, some evidence that stocks are more likely to go up if short-term interest rates decline than if they increase. Between 1928 and 2001, for instance, treasury bill rates dropped in 34 years, and stocks earned an average return of approximately 12% in the following years. In the 39 years where the treasury bill rate increased, stock returns averaged about 10.75% in the following year. This result has been confirmed by research. A closer look at the data does raise cautionary notes about this strategy, the correlation between treasury bill rates and stock market returns was examined in sub-periods from 1929 to 2000. This study found that almost all of the predictability of stock market returns comes from the 1950-1975 time period, and that short term rates have had almost no predictive power since 1975. It also concludes that short rates have more predictive power with the durable goods sector and with smaller companies than they do with the entire market.


Long Term Interest Rates

Intuitively, it is the treasury bond rate – the long-term riskless rate – that should have a much stronger impact on stock prices, since it offers a direct alternative to investing in stocks for long periods. If you can make 8% investing in treasury bonds for the next 30 years, why would you settle for less when investing in stocks? Thus, you should expect to see stock prices go up if the treasury bond rate is low and go down, if the rate is high. Figure 14.6 presents a plot of stock returns each year against the T.Bond rate at the start of the year:

Figure 14.6: T.Bond Rates and Stock Returns – 1960 - 2001

Data from Federal Reserve. Each point represents a year and the stock return in that year is plotted against the treasury bond rate at the start of the year.

The relationship is murky, at best. In 1981, for instance, the treasury bond rate at the start of the year was 14% but stocks did very well during the year, earning 15%. In 1961, the treasury bond rate at the beginning of the year was 2% and stocks dropped 11% during the year. There is little evidence of a link between the treasury bond rate at the start of a period and stock returns during that period.

This link between treasury bond rates and stock returns may become stronger if you consider how much you can earn as a return on stocks. You could define this return narrowly as the dividend yield (dividends/current stock prices) on the market or use a much
broader measure, such as earnings yield, which looks at the overall earnings on the market as a percent of the current level of the index. The earnings yield is the inverse of the price earnings ratio and is used widely by market strategists as a measure of how equities are priced relative to their earnings. Rather than focus on the level of the treasury bond rate, some market strategists often look at the difference between earnings yields and the treasury bond rate. They believe that it is best to invest in stocks when earnings yields are high, relative to the treasury bond rate. To examine this proposition, the difference between the earnings yield and the T.Bond rate at the end of every year from 1960 to 2000 was estimated and compared to the returns on the S&P 500 in the following year (see Table 14.2)

<table>
<thead>
<tr>
<th>Earnings yield - T.Bond Rate</th>
<th>Number of years</th>
<th>Stock Returns</th>
<th>Standard Deviation</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 2%</td>
<td>8</td>
<td>11.33%</td>
<td>16.89%</td>
<td>31.55%</td>
<td>-11.81%</td>
</tr>
<tr>
<td>1 -2%</td>
<td>5</td>
<td>-0.38%</td>
<td>20.38%</td>
<td>18.89%</td>
<td>-29.72%</td>
</tr>
<tr>
<td>0-1%</td>
<td>2</td>
<td>19.71%</td>
<td>0.79%</td>
<td>20.26%</td>
<td>19.15%</td>
</tr>
<tr>
<td>-1-0%</td>
<td>6</td>
<td>11.21%</td>
<td>12.93%</td>
<td>27.25%</td>
<td>-11.36%</td>
</tr>
<tr>
<td>-2-1%</td>
<td>15</td>
<td>9.81%</td>
<td>17.33%</td>
<td>34.11%</td>
<td>-17.37%</td>
</tr>
<tr>
<td>&lt; -2%</td>
<td>5</td>
<td>3.04%</td>
<td>8.40%</td>
<td>12.40%</td>
<td>-10.14%</td>
</tr>
</tbody>
</table>

When the earnings yield exceeds the treasury bond rate by more than 2%, which has occurred in 8 out of the 41 years, the return on the S&P 500 in the following year has averaged 11.33%. However, the returns are almost as good when the earnings yield has lagged the treasury bond rate by zero to 1%. It is true that the annual returns are only 3.04% in the five years following periods when the earnings yield was lower than the treasury bond rate by more than 2%, but the annual returns were also negative in the 5 years when the earnings yield exceeded the treasury bond rate by 1-2%. Thus, there seems to be little historical support for using earnings yield and treasury bond rates to predict future stock market movements.

**Business Cycles**

As with treasury bonds, there is an intuitive link between the level of stock prices and economic growth. You would expect stocks to do much better in economic booms than during recessions. What makes this relationship tricky, however, is that market movements are based upon predictions of changes in economic activity in the future, rather than levels
of activity. In other words, you may see stock prices rising in the depths of a recession, if investors expect the economy to begin recovering in the next few months. Alternatively, you may see stock prices drop even in the midst of robust economic growth, if the growth does not measure up to expectations. In Figure 14.7, the returns on the S&P 500 index and real GDP growth are graphed going back to 1960:

*Figure 14.7: GDP Growth and Stock Returns*

Data from Federal Reserve. Each point represents a year and the stock return in that year is plotted against GDP growth during the year.

There is a positive relationship between GDP growth during a year and stock returns during the year, but there is also a lot of noise in the relationship. For instance, the worst single year of stock returns was 1931, when GDP dropped by about 7%. The very best year of stock returns was 1954 but GDP declined slightly that year. The same dichotomy exists during years of positive GDP growth; stock returns dropped in 1941 even though the economy grew strongly that year but returns in 1995 were very positive as GDP grew about 4% that year. Even if the relationship were strong enough to pass muster, you cannot use it for market timing unless you can forecast real economic growth. The real question then becomes whether you can make forecasts of future stock market movements after observing economic growth in the last year. To examine whether there is any potential payoff to investing after observing economic growth in the prior year, the relationship between
economic growth in a year and stock returns in the following year, using data from 1929 to 2001 is looked at in Table 14.3:

Table 14.3: Real Economic Growth as a predictor of Stock Returns: 1960 – 2001

<table>
<thead>
<tr>
<th>GDP Annual Growth</th>
<th>Number of years</th>
<th>Average Return</th>
<th>Standard deviation in returns</th>
<th>Best Year</th>
<th>Worst Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;5%</td>
<td>23</td>
<td>10.84%</td>
<td>21.37%</td>
<td>46.74%</td>
<td>-35.34%</td>
</tr>
<tr>
<td>3.5%-5%</td>
<td>22</td>
<td>14.60%</td>
<td>16.63%</td>
<td>52.56%</td>
<td>-11.85%</td>
</tr>
<tr>
<td>2-3.5%</td>
<td>6</td>
<td>12.37%</td>
<td>13.95%</td>
<td>26.64%</td>
<td>-8.81%</td>
</tr>
<tr>
<td>0-2%</td>
<td>5</td>
<td>19.43%</td>
<td>23.29%</td>
<td>43.72%</td>
<td>-10.46%</td>
</tr>
<tr>
<td>&lt;0%</td>
<td>16</td>
<td>9.94%</td>
<td>22.68%</td>
<td>49.98%</td>
<td>-43.84%</td>
</tr>
<tr>
<td>All years</td>
<td>72</td>
<td>12.42%</td>
<td>19.50%</td>
<td>52.56%</td>
<td>-43.84%</td>
</tr>
</tbody>
</table>

There seems to be no clearly discernible relationship between returns next year and GDP growth this year. It is true that the years with negative GDP growth are followed by the lowest stock returns, but the average stock returns in this scenario are barely higher than the average returns you would have earned if you had bought after the best economic growth years (growth exceeds 5%).

If you can forecast future growth in the economy, it can be useful at two levels. One is in overall market timing, since you will steer more of your funds into stocks prior to better-than-expected economic growth and away from stocks when you foresee the economy slowing. You can also use the information to over invest in those sectors that are most sensitive to the economic cycle – automobile and housing stocks, for instance – if you believe that robust economic growth is around the corner.

**Market Timers**

While a variety of ways in which investors try to time markets have been looked at, a more fundamental question has not been asked: Do those who claim to time markets actually succeed? In this section, you will consider a broad range of investors who try to time markets and examine whether they succeed.

**Mutual Fund Managers**

Most equity mutual funds do not lay claims to market timing, but they do try to time markets at the margin by shifting their assets in and out of cash. You will begin by looking at whether they succeed on average. There are some mutual funds that claim market timing
as their primary skill and these funds are called tactical asset allocation funds. You will look at the track records of these funds and pass judgment on whether their claims hold up.

**Overall Evidence**

How do you know that mutual funds try to time markets? While all equity mutual funds need to hold some cash – investments in treasuries and commercial paper – to meet redemption needs and for day-to-day operations, they collectively hold much more cash than is necessary. In fact, the only explanation for the cash balances that you observe at equity mutual funds is that mutual funds use them to signal their views of future market movements – they hold more cash when they are bearish and less cash when they are bullish. In Figure 14.8 below, the average cash balance at mutual funds is presented, each year from 1980 to 2001 and the returns on the S&P 500 each year.

*Figure 14.8: Mutual Fund Cash Holdings and Stock Returns*

In each year, the stock return in that year and the cash holdings at mutual funds at the end of the year is shown.

Note that the cash balances seem to increase after bad years for the market and decrease after good years, but there is little predictive power in the level of cash holdings. The question of whether mutual funds are successful at market timing has been examined widely in the literature going back four decades.
Other studies have looked at whether mutual funds succeed at shifting their money into higher beta stocks\textsuperscript{18} just before equity markets surge and at whether mutual funds earn higher returns in years in which the market does well but have found little evidence of market timing prowess on the part of mutual funds.\textsuperscript{19}

\textit{Tactical Asset Allocation and other Market timing Funds}

In the aftermath of the crash of 1987, a number of mutual funds sprung up claiming that they could have saved investors the losses from the crash by steering them out of equity markets prior to the crash. These funds were called tactical asset allocation funds and made no attempt to pick stocks. Instead, they argued that they could move funds between stocks, treasury bonds and treasury bills in advance of major market movements and allow investors to earn high returns. Since 1987, though, the returns delivered by these funds has fallen well short of their promises. Figure 14.9 compares the returns on a dozen large tactical asset allocation funds over 5-year and 10-year periods (1987-97) to both the overall market and to fixed mixes – 50\% in both stocks and bonds, and 75\% stocks/25\% bonds. The last two are called couch potato mixes, reflecting the fact that you are making no attempt to time the market.

\textsuperscript{18} See Treynor, Jack L., and Kay Mazuy, 1966, \textit{Can mutual funds outguess the market? Harvard Business Review} 44, 131-136.. They argued that if mutual funds have market timing skills, they should buy high beta stocks just before up movements in the stock market, since these stocks should up go up even more. Their conclusion was that mutual funds did the exact opposite – moved into high beta stocks just before market declines.

The couch potato strategies represent fixed allocations (50/50 is always 50% stock and 50% bonds). The average across asset allocation funds is compared to the couch potato strategies.

One critique of this study may be its focus on a few tactical asset allocation funds. In 1998, an examination of a much larger sample more than 100 asset allocation funds between 1990 and 1995 also found little evidence of success at market timing at these funds.

Investment Newsletters

There are hundreds of investment newsletters that investors subscribe to for sage advice on investing. Some of these investment newsletters are centered on suggesting individual stocks for investors but some are directed towards timing the market. For a few hundred dollars, you are told, you too can be privy to private signals of market movements.

An analysis of the market timing abilities of investment newsletters examined the stock/cash mixes recommended in 237 newsletters from 1980 to 1992. If investment newsletters are good market timers, you should expect to see the proportion allocated to

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stocks increase prior to the stock market going up. When the returns earned on the mixes recommended in these newsletters is compared to a buy and hold strategy, 183 or the 237 newsletters (77%) delivered lower returns than the buy and hold strategy. One measure of the ineffectuality of the market timing recommendations of these investment newsletters lies in the fact that while equity weights increased 58% of the time before market upturns, they also increased by 53% before market downturns. There is some evidence of continuity in performance, but the evidence is much stronger for negative performance than for positive. In other words, investment newsletters that give bad advice on market timing are more likely to continue to give bad advice than are newsletters that gave good advice to continue giving good advice.\textsuperscript{22}

The only hopeful evidence on market timing comes from a study of professional market timers who are investment advisors. These timers provide explicit timing recommendations only to their clients, who then adjust their portfolios accordingly - shifting money into stocks if they are bullish and out of stocks if they are bearish. An examination of the timing calls made by 30 professional market timers who were monitored by MoniResearch Corporation, a service that monitors the performance of such advisors, finds some evidence of market timing ability.\textsuperscript{23} Note, though, that the timing calls were both short term and frequent. One market timer had a total of 303 timing signals between 1989 and 1994, and there were, on average, about 15 signals per year across all 30 market timers. Notwithstanding the high transactions costs associated with following these timing signals, following their recommendations would have generated excess returns for investors.\textsuperscript{24}

\textit{Market Strategists}

The market strategists at major investment banks represent perhaps the most visible symbols of market timing. Their prognostications about the market are widely disseminated not only by their investment banks but also by the media. Abby Cohen (Goldman Sachs), Doug Cliggott (Morgan Chase) and Byron Wien (Morgan Stanley) are all widely known. While much of what market strategists say about markets cannot be easily categorized as

\textsuperscript{22} A good market timing newsletter is likely to repeat its success about 50% of the time. A poor market timing newsletter has a 70% chance of repeating its poor performance.


\textsuperscript{24} The study looked at excess returns after transactions costs but before taxes. By its very nature, this strategy is likely to generate large tax bills, since almost all of your gains will be taxed at the ordinary tax rate.
bullish or bearish– good market strategists are difficult to pin down when it comes to explicit forecasts – they also make specific recommendations on preferred asset allocation mixes that are presented in the Wall Street Journal. Table 14.4 provides the asset allocation mixes recommended by major investment banks in June 2002.

**Table 14.4: Asset Allocation Mixes – Investment Bank Strategists**

<table>
<thead>
<tr>
<th>Firm</th>
<th>Strategist</th>
<th>Stocks</th>
<th>Bonds</th>
<th>Cash</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.G. Edwards</td>
<td>Mark Keller</td>
<td>65%</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>Banc of America</td>
<td>Tom McManus</td>
<td>55%</td>
<td>40%</td>
<td>5%</td>
</tr>
<tr>
<td>Bear Stearns &amp; Co.</td>
<td>Liz MacKay</td>
<td>65%</td>
<td>30%</td>
<td>5%</td>
</tr>
<tr>
<td>CIBC World Markets</td>
<td>Subodh Kumar</td>
<td>75%</td>
<td>20%</td>
<td>2%</td>
</tr>
<tr>
<td>Credit Suisse</td>
<td>Tom Galvin</td>
<td>70%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Goldman Sachs &amp; Co.</td>
<td>Abby Joseph Cohen</td>
<td>75%</td>
<td>22%</td>
<td>0%</td>
</tr>
<tr>
<td>J.P. Morgan</td>
<td>Douglas Cliggott</td>
<td>50%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Legg Mason</td>
<td>Richard Cripps</td>
<td>60%</td>
<td>40%</td>
<td>0%</td>
</tr>
<tr>
<td>Lehman Brothers</td>
<td>Jeffrey Applegate</td>
<td>80%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Merrill Lynch &amp; Co.</td>
<td>Richard Bernstein</td>
<td>50%</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>Morgan Stanley</td>
<td>Steve Galbraith</td>
<td>70%</td>
<td>25%</td>
<td>5%</td>
</tr>
<tr>
<td>Prudential</td>
<td>Edward Yardeni</td>
<td>70%</td>
<td>30%</td>
<td>0%</td>
</tr>
<tr>
<td>Raymond James</td>
<td>Jeffrey Saut</td>
<td>65%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>Salomon Smith</td>
<td>John Manley</td>
<td>75%</td>
<td>20%</td>
<td>5%</td>
</tr>
<tr>
<td>UBS Warburg</td>
<td>Edward Kerschner</td>
<td>80%</td>
<td>20%</td>
<td>0%</td>
</tr>
<tr>
<td>Wachovia</td>
<td>Rod Smyth</td>
<td>75%</td>
<td>15%</td>
<td>0%</td>
</tr>
</tbody>
</table>

How do these allocation mixes yield market predictions? One way is to look at the percent allocated to stocks. More bullish market strategists will recommend a larger proportion of the portfolio be invested in stocks, whereas bearish strategists will overweight cash and bonds. The other is to look at changes in holdings recommended by the same strategist from period to period – an increase in the proportion allocated to stocks would indicate more bullishness. On both dimensions, the market timing skills of strategists are questionable. The *Wall Street Journal*, in addition to reporting the asset allocation mixes of strategists also compares the returns that would have been generated by following each bank’s allocation advice to the returns you would have made by being fully invested in stocks over 1-year, 5-year and 10-year periods. To counter the argument that it is unfair to compare a 100% equity portfolio to a asset allocation mix, the Journal also reports on the returns on a robot mix – a fixed allocation across stocks, bonds and bills. Figure 14.10 summarizes the returns on all three, as well as the returns you would have earned by
following the strategist who had the best mixes over the period and the one with the worst mixes:

Data from Wall Street Journal. These are the annual returns you would have made between 1992 and 2001 following the asset allocation advice offered by market strategists at major investment banks.

Note that the returns on the robot mix are higher than the average returns generated by following the average market strategists. Of the 16 banks that the Wall Street Journal tracks, only five would have generated returns higher than the robot mix over the period and even those would have well within a statistical margin for error. Finally, even the best strategist’s asset mix would have underperformed a strategy of being fully invested in stocks. Overall, the evidence indicates that the market timing skills of leading market strategies are vastly overstated.

The Rest of the Story

The evidence on stock market timing is decidedly mixed. While some timing indicators seem to offer promise in predicting market direction, those who use them do not earn excess returns. How do you explain this contradiction? In this section, you will look at the reasons why a unshakeable faith in equity markets in the long term can be dangerous and why market timing indicators do not pay off for most investors.
Stocks are not riskless in the long term

In bear markets, you do not have to spend much time convincing investors that investing in stocks is risky but a prolonged and strong bull market often leads these same investors to the conclusion that equity is not risky, at least in the long term. Earlier in the chapter, you examined some of the evidence, primarily from the U.S. market since 1926, used to sustain this point of view. In this section, you will evaluate the evidence from other equity markets in the world to see if it backs up the evidence in the U.S.

Survivor market bias

One of the problems with extrapolating the findings from the U.S. equity market in the twentieth century is that the United States was perhaps the most successful economy and market in the world in that century. In other words, you have a selection bias. To provide an analogy with individual stocks, this would be the equivalent of picking the top ten companies in the United States, in terms of market capitalization today, and examining whether your would have made money investing in these companies. The answer, not surprisingly, will be yes since these companies acquired their large market capitalization status by being successful over long periods.

To provide some balance, therefore, you have to look at the returns investors in equities would have earned in other (and less successful) equity markets. The most detailed look at these returns estimated the returns you would have earned on 14 equity markets between 1900 and 2001 and compared these returns with those you would have earned investing in bonds.25 Figure 14.11 presents the risk premiums – i.e., the additional returns - earned by investing in equity over treasury bills and bonds over that period in each of the 14 markets:

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Data from Dimson et al. The differences in compounded annual returns between stocks and short term governments/long term governments is reported for each country.

While equity returns were higher than what you would have earned investing in government bonds or bills in each of the countries examined, there are wide differences across countries. If you had invested in Spain, for instance, you would have earned only 3% over government bills and 2% over government bonds on an annual basis by investing in equities. In France, in contrast, the corresponding numbers would have been 7.1% and 4.6%. Looking at 40 or 50 year periods, therefore, it is entirely possible that equity returns can lag bond or bill returns, at least in some equity markets.

Equity investors therefore have to wonder whether the market they are investing in currently will be one of the winner markets (like the US in the twentieth century) or a lagging market (like the Japanese market since 1989). Since there is a probability that every market (including the US equity market today) can be a lagging market over the next few decades, you should be cautious about investing too much in equities in any particular market. You may be able to improve the odds by investing in a global equity fund but even there, you can be exposed to risk over long time periods.
How long term is long term?

Financial experts and advisors who argue that stocks win in the long term are often ambiguous about what they mean by the long term and investors often define long term in very different ways- one year may represent long term for an impatient investor whereas 20 years may be long term to a patient investor.

Equities clearly are not riskless over one year, but are they close to riskless if you have a 20-year time horizon? Not necessarily, for several reasons:

- Even long time horizons can be shortened by unanticipated events. For example, consider the advice given to a 35-year old about her pension fund investments. With 30 years left to retirement, she seems like a perfect candidate for a long-term investment strategy. That is predicated though on the belief that she will stay healthy and continue to work for that period. If she has to retire early due to health problems or loses her job, she may find herself needing to draw on her pension fund savings far sooner.

- Investors save over time and they save more in up markets and in their later years: Assume that you are 35 years old and that you have 30 years until retirement. You will be saving over time for your retirement and your contributions to your pension fund will tend to get larger as you get older (and closer to retirement). In effect, this will reduce the effective time horizon you have on your investments. In addition, you will tend to save more and invest more in stocks in buoyant stock markets and less in depressed markets. Given the history of the market, this will imply that you will be over invested in stocks when they are over valued and under invested when stocks are a good bargain.

- Even the most optimistic assessment of the historical data on stock returns can only lead to the conclusion that while there is a high probability that stocks will earn higher returns than less risky alternatives over long time periods, there is no guarantee. In fact, a more realistic evaluation of stock market history, in the U.S. and elsewhere, suggests that the probability that equities will under perform government bonds over longer period is too large to be ignored by investors. Even a 5% probability that stocks will under perform bonds over the long term may be sufficient to induce more risk averse investors to invest more in bonds and less in stocks.

The perils of investing in equities even with a long time horizon are illustrated when you look at the Japanese equity market over the last 15 years. An investor who invested his wealth in the Nikkei in 1989 when the index peaked at close to 40000 would have lost 80% of his investment by 2003 and is extremely unlikely to recover his losses whole in his lifetime.
Market Timing Indicators and Success

Why do market timers succeed so infrequently if there are so many market timing indicators that make money, at least on paper? In this section, you will consider some of the dangers involved with trying to time markets and with following the advice of market gurus.

Hindsight Bias

Market timing always seems simple when you look back in time. After the fact, you can always find obvious signals of market reversals – bull markets turning to bear markets or vice versa. Thus, in 2001, there were investors who looked back at 1999 and bemoaned the fact that they missed getting out of stocks when the market topped at the end of that year. At that time, though, the signs were not so obvious. There were analysts who argued that the market was overvalued and indicators that supported that point of view, but there were just as many analysts, if not more, who saw the market continuing to rise and had supporting models.

In practice, there is almost never a consensus among investors on whether markets have hit bottom or peaked at the time that it occurs. It is an interesting fact that optimism about the future is greatest just as markets top out and the market mood is darkest just as markets turn around. To succeed at market timing, you cannot wait until a bottom has been established before buying or for a market top before selling. If you do, you will miss much of the subsequent payoff.

Timing of Information

If you are considering timing the market using macroeconomic variables such as inflation or economic growth, you should also take into account the time lag before you will get this information. Consider, for instance, research that shows that stock prices tend to go up after quarters of high GDP growth. An obvious strategy would be to buy stocks after a quarter of high GDP growth and sell after a quarter of negative or low GDP growth. The problem with the strategy is that the information on GDP growth will not be available to you until you are two months into the next quarter.

If you use a market variable such as the level of interest rates to make your market forecasts, you are in better shape since this information should be available to you contemporaneously with the stock market. In building these models, you should be careful and ensure that you are not building a model where you will have to forecast interest rates in order to forecast the stock market. To test for a link between the level of interest rates and stock market movements, you would look at the relationship between interest rates at the beginning of each year and stock returns over the year. Since you can observe the former before you make your investment decision, you would have the basis for a viable strategy if
you find a correlation between the two. If you had run the test between the level of interest rates at the end of each year and stock returns during the year, implementing an investment strategy even if you find a correlation would be problematic since you would have to forecast the level of interest rates first.

**Noise in Forecast**

As the evidence in the last section should make clearly, no market-timing indicator is perfect or even close to perfect. In fact, the best market timers are right perhaps 60 to 65% of the time, and even then, only about market direction and not magnitude. In other words, a specific indicator, be it the returns in January or the level of interest rates, may give you some indication of whether the market is more likely to go up or down over the rest of the year but not by how much.

Both of these characteristics of market timing indicators – the significant proportion of the time that they are wrong in calling market direction and their lack of success at forecasting the size of the market movement – restrict the investment strategies that you can use to time markets. Derivatives such as stock index futures and options, which would generate the highest returns, have to be avoided because the risk of being wrong is too large.

**Lack of Consistency**

Market timers are the meteors of the investment universe. While they attract a great deal of attention when they shine, they fade quickly. Looking at the high profile market timers (Market Gurus) over time, from Jesse Livermore in the early part of this century to Ralph Acampora, Prudential’s flamboyant market strategist, in the 1990s, you find a diverse group.26 Some were chartists, some used fundamentals and some were mysterious about their methods, but there are three common characteristics that they seem to share:

1. **A capacity to see the world in black and white**: Market gurus do not prevaricate. Instead, they make bold statements that seem outrageous when they make them about where the market will be 6 months or a year from now. Acampora, for instance, made his reputation with his call that the Dow would hit 7000 when it was at 3500.

2. **A correct call on a big market move**: All market timers make their reputation by calling at least one big market move. For Livermore, it was the market crash of 1929 and for Acampora, it was the bull market of the 1990s.

3. **Outside personalities**: Market gurus are born show persons, who use the media of their time as megaphones to publicize not only their market forecasts but the news of their

26 One of the best books on Livermore is the classic “Reminiscences of a Stock Market Operator” by Edwin LeFevre, John Wiley and Sons.
successes. In fact, part of their success can be attributed to their capacity to make other investors act on their predictions, making these predictions, at least in the near term, self-fulfilling prophecies.

So why do great market gurus stumble? The very same factors that contribute to their success seem to underlie their failures. The absolute conviction they have in their market timing abilities and their success at timing markets seems to feed into more outrageous calls that ultimately destroy their reputations. Joe Granville, one of the market gurus of the late 1970s, for instance, spent all of the eighties recommending that people sell stocks and buy gold and his newsletter was ranked the worst, in terms of performance, for the decade.

**The Cost of Market Timing: Transactions and Opportunity Costs**

If market timing were costless, you could argue that everyone should try to time markets, given the huge returns to getting it right. There are, however, significant costs associated with trying to time markets (and getting it wrong):

- In the process of switching from stocks to cash and back, you may miss the best years of the market. An article titled “The Folly of Stock Market Timing”, examined the effects of annually switching from stock to cash and back from 1926 to 1982 and concluded that the potential downside vastly exceeds the potential upside. 27, In an analysis of market timing, Bill Sharpe suggested that unless you can tell a good year from a bad year 7 times out of 10, you should not try market timing.28 This result is confirmed by Monte Carlo simulations on the Canadian market, which show that you have to be right 70-80% of the time to break even from market timing.29
- This research does not consider the additional transactions costs that inevitably flow from market timing strategies, since you will trade far more extensively if you follow them. In its most extreme version, a stock/cash switching strategy will mean that you will have to liquidate your entire equity portfolio if you decide to switch into cash and start from scratch again the next time you want to be in stocks.

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• A market timing strategy will also increase your potential tax liabilities. To see why, assume that you have a strategy of selling your stocks after two good years in the market, based upon the empirical findings that a bad year is more likely to follow. You will have to pay capital gains taxes when you sell your stocks, and over your lifetime as an investor, you will pay far more in taxes.

Lessons for Investors

Trying to time markets is a much more daunting task than picking stocks. All investors try to time markets and very few seem to succeed consistently. If, notwithstanding this history of failure, you decide to time markets, you should try to do the following:

1. Assess your time horizon: Some market timing indicators such as those based upon charting patterns and trading volume try to forecast market movements in the short term, whereas others such as using a normalized PE ratio to predict stock prices are long term strategies. You need to have a clear sense of your time horizon before you pick a market timing strategy. In making this judgment, you will need to look not only at your willingness (or lack thereof) to wait for a payoff but also at how dependent you are on the cash flows from your portfolio to meet your living needs; if your job is insecure and your income is volatile, your time horizon will shrink.

2. Examine the evidence: The proponents of every market timing strategy will claim that the strategy works and present you with empirical evidence of the incredible returns you could have made from following it. You should consider all the caveats from the last section when you look at the evidence including:

   a. Is the strategy being fit back into the same data from which it was extracted? You should be suspicious of elaborate trading strategies which seem to have no economic basis or rationale – buy small cap stocks with price momentum at 3 pm every Thursday and sell at 1 pm the next day, for instance. Odds are that thousands of strategies were tested out on a large database and this one emerged. A good test will look at returns in a different time period (called a holdout period).

   b. Is the strategy realistic? Some strategies look exceptionally good as constructed but may not be viable since the information that they are based on would not have been available at the time you would have had to trade. You may find, for instance, that you can make money (at least on paper) if you buy stocks at the end of every month where investors put more money into mutual funds than they take out. The problem, though, is that this
information will not be available to you until you are well into the next month.

c. Have execution costs and problems been considered? Many short-term market timing strategies require constant trading. The trading costs and tax liabilities created by this trading will be substantial and the returns, prior to considering these costs, have to be substantially higher than a buy and hold strategy for the strategy to make sense.

3. *Integrate market timing with security selection:* While many investors consider market timing and security selection to be mutually exclusive, they don’t have to be. You can and should integrate both into your overall strategy. You can, for instance, use a volume indicator to decide when and whether to get into equities, and then invest in stocks with low PE ratios because you believe these stocks are more likely to be under valued.

**Conclusion**

If you can time markets, you can make immense returns and it is this potential payoff that makes all investors into market timers. Some investors explicitly try to time markets using technical and fundamental indicators, whereas others integrate their market views into their asset allocation decisions, shifting more money into stocks when they are bullish on stocks. Looking at the evidence, though, there are no market timing indicators that deliver consistent and solid returns. In fact, there is little proof that the experts at market timing - market strategists, mutual funds and investment newsletters, for example – succeed at the endeavor.

Notwithstanding this depressing evidence, investors will continue to time markets. If you choose to do so, you should pick a market timing strategy that is consistent with your time horizon, evaluate the evidence on its success carefully and try to combine it with an effective stock selection strategy.