

# Investing Amid Low Expected Returns

**Making the Most  
When Markets Offer the Least**

**Antti Ilmanen**

Foreword by **Cliff Asness**



**WILEY**

# Contents

|  |             |
|--|-------------|
| <b>Foreword by Cliff Asness</b>  | <b>xiii</b> |
| <b>Part I: Setting the Stage</b>   | <b>1</b>    |
| <b>Chapter 1</b> Introduction  | 3           |
| 1.1. Serenity Prayer and Low Expected Returns  | 3           |
| 1.2. Outline of This Book  | 6           |
| 1.3. On Investment Beliefs   | 11          |
| <b>Chapter 2</b> The Secular Low Expected Return Challenge                           | 15          |
| 2.1. Broad Context   | 15          |
| 2.2. Rearview-Mirror Expectations, Discount Rate Effect,<br>and Low Expected Returns | 17          |
| 2.3. How Low Are “Riskless” Long-term Yields from<br>a Historical Perspective?       | 21          |
| 2.4. Decadal Perspective on Investment Returns                                       | 24          |
| <b>Chapter 3</b> Major Investor Types and Their Responses to This Challenge          | 27          |
| 3.1. Three Broad Investor Types  | 28          |
| 3.2. History of Institutional Asset Allocation                                       | 33          |
| 3.3. How Has the Low Expected Return Challenge<br>Hurt Various Investor Types?       | 42          |
| 3.4. How Are Investors Responding to the Low<br>Expected Return Challenge?           | 45          |

|  |            |
|--|------------|
| <b>Part II: Building Blocks of Long-Run Returns</b>                            | <b>49</b>  |
| <b>Chapter 4</b> Liquid Asset Class Premia                                     | 51         |
| 4.1. Riskless Cash Return  | 52         |
| 4.2. Equity Premium  | 55         |
| 4.3. Bond Risk Premium   | 69         |
| 4.4. Credit Premium  | 74         |
| 4.5. Commodity Premium   | 81         |
| <b>Chapter 5</b> Illiquidity Premia  | 87         |
| 5.1. Illiquid Alternative/Private Assets                                       | 88         |
| 5.2. Less Liquid Public Assets   | 101        |
| 5.3. Liquidity Provision Strategies  | 102        |
| <b>Chapter 6</b> Style Premia  | 105        |
| 6.1. Value and Other Contrarian Strategies                                     | 109        |
| 6.2. Momentum and Other Extrapolative Strategies                               | 117        |
| 6.3. Carry and Other Income Strategies   | 124        |
| 6.4. Defensive and Other Low-Risk/Quality Strategies                           | 131        |
| <b>Chapter 7</b> Alpha and Its Cousins   | 139        |
| 7.1. Alpha and Active Returns  | 139        |
| 7.2. Reviewing the Classification of Portfolio Return Sources                  | 146        |
| 7.3. Demystifying Hedge Funds, Superstars, and Other Active Managers           | 147        |
| <b>Chapter 8</b> Theories Explaining Long-run Return Sources                   | 151        |
| 8.1. Rational Reward for Risk or Irrational Mispricing?                        | 152        |
| 8.2. “Bad Returns in Bad Times” at the Heart of Risk Premia                    | 153        |
| 8.3. Other Core Ideas for Rational Risk Premia and Behavioral Premia           | 155        |
| 8.4. Who Is on the Other Side? – and Related Crowding Concerns                 | 158        |
| <b>Chapter 9</b> Sustaining Conviction and Patience on Long-run Return Sources | 163        |
| 9.1. Patience: Sustaining Conviction When Faced with Adversity                 | 164        |
| 9.2. Economic Rationale – and Has the World Changed?                           | 169        |
| 9.3. Empirical Evidence – and Data Mining Concern                              | 170        |
| <b>Chapter 10</b> Four Equations and Predictive Techniques                     | 173        |
| 10.1. Four Key Equations and Some Extensions                                   | 173        |
| 10.2. Overview of Predictive Techniques  | 180        |
| <b>Part III: Putting It all Together</b>                                       | <b>185</b> |
| <b>Chapter 11</b> Diversification – Its Power and Its Dark Sides               | 187        |
| 11.1. Outline of the Remainder of This Book                                    | 187        |
| 11.2. Ode to Diversification   | 188        |
| 11.3. Critics’ Laments   | 193        |

|                        |  |            |
|------------------------|--|------------|
| <b>Chapter 12</b>      | Portfolio Construction   | 195        |
|                        | 12.1. Top-down Decisions on the Portfolio  | 195        |
|                        | 12.2. Mean-variance Optimization Basics and Beyond                                     | 200        |
|                        | 12.3. Pitfalls with MVO and How to Deal with Them                                      | 204        |
| <b>Chapter 13</b>      | Risk Management  | 207        |
|                        | 13.1. Broad Lens and Big Risks   | 208        |
|                        | 13.2. Techniques for Managing Investment Risk  | 209        |
|                        | 13.3. Managing Tail Risks: Contrasting Put and Trend Strategies                        | 210        |
|                        | 13.4. Managing Market Risks: Portfolio Volatility and Beyond                           | 214        |
| <b>Chapter 14</b>      | ESG Investing  | 219        |
|                        | 14.1. Booming ESG  | 220        |
|                        | 14.2. How Does ESG Affect Returns?   | 221        |
|                        | 14.3. ESG Impact of ESG Investing – a Case Study on Climate Change                     | 224        |
| <b>Chapter 15</b>      | Costs and Fees   | 225        |
|                        | 15.1. Trading Costs  | 226        |
|                        | 15.2. Asset Management Fees  | 230        |
| <b>Chapter 16</b>      | Tactical Timing on Medium-term Expected Returns  | 235        |
|                        | 16.1. Contrarian Timing of the US Equity Market  | 235        |
|                        | 16.2. Beyond Contrarian Timing of Equities: Other Assets and Factors, Other Predictors | 240        |
| <b>Chapter 17</b>      | Bad Habits and Good Practices  | 243        |
|                        | 17.1. Multiyear Return Chasing   | 244        |
|                        | 17.2. Other Bad Habits and Good Practices  | 246        |
| <b>Chapter 18</b>      | Concluding Remarks   | 249        |
| <b>Acknowledgments</b> |  | <b>253</b> |
| <b>Author Bio</b>      |  | <b>255</b> |
| <b>Acronyms</b>        |  | <b>257</b> |
| <b>References</b>      |  | <b>259</b> |
| <b>Index</b>           |  | <b>277</b> |
| <b>Boxes</b>           |  |            |
|                        | 3.1 Global Market Portfolio  | 39         |
|                        | 4.1 A Brief History of Inflation   | 54         |
|                        | 4.2 Weak Empirical Relationship Between GDP Growth and Equity Returns                  | 67         |
|                        | 5.1 Share of Illiquid Assets in Global Wealth  | 89         |
|                        | 5.2 Calendar Strategies  | 103        |
|                        | 6.1 The Size Premium   | 107        |
|                        | 7.1 Systematic Versus Discretionary Investing  | 142        |
|                        | 8.1 How to Make Sense of Flow Data When Every Buyer Has a Seller                       | 161        |
|                        | 10.1 Machine Learning  | 183        |
|                        | 11.1 Rebalancing   | 192        |
|                        | 12.1 Modern Portfolio Theory and Two-Fund Separation                                   | 202        |
|                        | 13.1 Can Risk Management Enhance Returns? Volatility Targeting                         | 216        |
|                        | 15.1 Taxes   | 233        |





# Foreword

I know what you're thinking: another book?! What could Antti possibly have forgotten to say in his first 550-pager? I mean, you did read every page including the footnotes and the rather weak phoned-in Foreword, didn't you? Of course you did. Well, simply put, a lot happens in 10 years. Things happen in markets. Things happen in politics. Things happen in research. (Yes, we actually learn some stuff, and unlearn some stuff we thought we knew.)

For one, and you may have noticed this from the title of the book, markets have near ubiquitously gotten even more expensive. This has some potentially depressing consequences for the future, and, frankly, no option for dealing with this problem is particularly pleasant (save, we're all wrong, and stocks and bonds are actually dirt cheap right now – but don't hold your breath!). Globally, lower expected returns have no easy fix. But Antti, with some help from Stoics and St. Augustine, tackles this head-on in Part 1. Essentially the options are (a) take more risk so even with lower expected returns you can hit your goals (certainly counterintuitive as it's literally saying, "This looks worse than normal, so give me more," but some investors, with binding expected return floors they can't fall below, sometimes, hopefully reluctantly, need to do this); (b) ignore it and accept lower expected returns for the foreseeable future, don't "get cute" and try to ameliorate the problem, and just ride it out (I call this the "Jack Bogle" argument though, through our friendship, and with a twinkle in his eye, even Jack bragged to me a bit about selling some stocks in 1999–2000); or (c) find and incorporate other sources of expected return that either aren't very low now, or perhaps are compressed but are not correlated with the ones you invest in already (i.e. build a better portfolio). Antti considers all these.

Another thing that happens after 10 years is – wait for it – we collectively have ten more years of data/history to learn from. While ten years is not enough time to seriously change our view of long-term expected returns (see my Foreword to Antti's first book on how hard this is), it's still the case that for some asset classes and strategies (e.g. illiquid ones), ten more years is a big fraction of their total histories, and thus it is still a pretty big deal to obtain them. And for other asset classes and strategies we have (not just Antti and me or AQR, though we've done our share, but the broader community of researchers) spent some of the past ten years building meaningfully longer histories by going back further in time. It's sometimes counterintuitive, and

we recognize that older data may or may not be as relevant as current data, but as long as you've not yet peeked, new data further back in time is as much "out of sample" as future data. The credit premium, commodity premium, and especially style premia (aka alternative risk premia) are helpful data my colleagues and I (again it was not just us) are proud of having extended historically further back than previously known or at least widely available – in some cases now having nearly a hundred years of evidence (and in some really special cases even longer than that). To our satisfaction, and admittedly relief (you never know when going out of sample!), the older data provided yet more evidence that these premia are likely real and significant.

But, as excited as we are about more data – and you might not expect to hear this from a "quant" – more data doesn't always mean more "truth." Realized returns are noisy beasts over even time frames we'd all call long-term. As I've recently written about, changes in valuation can influence our estimates of realized (and expected future) returns a lot, over some surprisingly long time frames. (In one piece I show strategies like long-short value and just passive stock market exposure, starting out expensive and ending up even more expensive, have substantially distorted estimates of the natural expected return over even a seventy-year time horizon; see Asness (2021)). This Foreword is not the place for the details, but put simply, we believe that obtaining estimates of expected return that do not give undue credit for a strategy getting more expensive or undue blame for it cheapening (as rarely are either expected to occur in perpetuity going forward) is doable, yielding less biased (more accurate) and more precise (an underappreciated advantage) estimates for the future. But, none of this changes the sentiment that strategies getting very cheap or very expensive over the period studied do matter a ton in the real world over time horizons investors care about. We have often used the physics-envy term "time dilation" to refer to how long real life can seem while living it versus how short it can seem when checking out a backtest. It's easy to look at a good backtest in an intuitive robust strategy and examine its three- to five-year painful periods and think, "Of course I'd stick with it, it makes economic sense and look at the whole history!" But, I'm guessing, to none of our readers' surprise, it's a little harder to do live and real-time! To state the obvious, you need the best strategy you can stick with, not the even-better-in-theory strategy that you can't. You can influence that in two very different ways. You can alter your strategy, or come up with ways to put it in perspective that can help you stick with the best versions. We hope that, in particular, by explaining how distortive valuation changes can be, and coming up with concrete and useful ways to incorporate this into our estimates going forward, we can get both less biased and more precise estimates and, through the power of this argument, buck up some investors through deeper understanding. Luckily, Antti is a master teacher. In particular in Part 2 Antti brings his "twin perspectives" to bear, sharing tons of evidence, theory, and lived experience (we've both been doing this a while!) to help.

Antti and I have had many of the same teachers, from our days in graduate school to even our decades apart as researchers in the "real world," and especially learning from our colleagues over the past 10 years at AQR (not to mention AQR's "extended family" of academic consultants, co-authors, etc.). There's no getting away from the fact that this book is to some extent a reflection of Antti's beliefs, of my beliefs, and of AQR's beliefs. I say that for both disclosure, and because it's just true (not always the same thing! 😊) and something readers should know. While Antti and I don't agree on everything (for instance, he's Finnish and thinks going from a 190° Fahrenheit sauna to immediately roll around in the snow is "healthy"), we do agree on much more than we don't.

And this brings me to the uncomfortable (for me) topic of Antti sharing our stuff. Antti is, to put it politely, an "over-sharer." This is generally a good thing in a researcher. No hiding assumptions, lots of musing about the many reasons he could be wrong with an open mind, all good

things. But, the crux here, he has a true natural bias to reveal some things we'd sometimes prefer to keep to ourselves for a while! But that's my problem, not yours. I think it is certainly good for you as the reader! Though, to be fair, we don't let Antti share everything. He goes pretty far herein, even further than his last book, but we do believe we have some sources of "alpha" (such a loaded word) that are still relatively unique and there we do clamp down on Antti a bit (not an easy task!). Maybe, if the pattern continues, we'll let him go even further for book number three in the year 2031.

OK, back to the book. Even though it starts with doom-and-gloom in terms of low expected returns, it doesn't end that way. Parts 2 and 3 cover a wide range of ideas to improve investor outcomes that don't rely on markets going up. Some are strategies not particularly rich or cheap (so not a tactical view) but just sources of expected return not correlated to the major ones and, we believe, endemically underutilized in most portfolios. But some are tactical. In particular, what we have deemed (back in 1999–2000 for you old timers) the "value spread" shows that, unlike so many other premia that appear expensive, the value premium, historically positive on average, seems record cheap now (a self-serving opinion and one that will date my Foreword!). Antti covers this (e.g. in Figure 6.3 and a few other places). But, given it's one of the only things I can think of that both has made money over the very long-term and is currently very cheap versus history, it deserves its own mention. When such a reversal will happen is, of course, always the most difficult part. But that we believe it will happen net from here is one of the only silver linings we find among a world of almost all low expected future returns, and, again, although self-serving (I got my kids' money way overweight on this one and they're starting to ask for portfolio reviews over dinner!), I think it's exciting enough to stress here even more.

Finally, there are also some often overlooked parts of the investment process – not as sexy as what to buy and when to buy (or sell) it, but still vital: things like risk management, portfolio construction, and even the mundane but vital area of trading costs and fees. Antti is steeped in both real world and theoretical experience in these areas and he, thankfully, doesn't neglect them. Needless to say, in a world of low expected returns going forward, obsessing over this stuff, always a good idea, goes up even more in importance. When the world is offering you less for showing up, giving up more on, say, a sloppy implementation that overtrades or takes many unintended bets, is a more serious offense than usual.

Summing up, the past 10 years have challenged many ideas and beliefs that were once considered conventional wisdom (e.g. contrarian valuation-based market timing has not worked well in a world of continually more expensive stocks), reinforced others that are too often overlooked (e.g. trading costs matter), and have thrust what were once nice ideas (e.g. ESG, another topic Antti brings great insight to) into the front ranks of importance.

This book covers all that, and, since it is, after all, Antti's work, does much more too. (Overly terse is not an insult that has ever been hurled at Antti, though I think this book is far easier going than the last wonderful but dense one.) As close as I am to these issues and the underlying research, I still learned from this book, and hope you all feel the same way and enjoy it as much as I did.

**Cliff Asness**

Managing and Founding Principal,  
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November 2021





# Chapter 1

## Introduction

- Lower asset yields and richer asset prices have brought forward future returns. The pay-back time for the recent decades' windfall gains is approaching.
- Most assets are expensive compared to their history. It is not just bonds.
- Few investors have had the serenity to accept low prospective returns. Most hard choices have been delayed. Reaching for yield helps only so far.
- Good investing practices such as discipline, humility, and patience are timeless but become even more important in tough times. Focus on what you can control.
- This book's first part sets the stage. It puts the low expected return challenge and different investors' responses in broad historical context.
- The second part reviews the building blocks that may help improve long-run returns. It updates and extends evidence on market risk premia, illiquidity premia, style premia, and alpha.
- Those blocks still need to be put together. The third part covers portfolio construction, risk management, ESG, cost control, tactical timing, and bad habits.

### 1.1. Serenity Prayer and Low Expected Returns

#### *Serenity Prayer versus St. Augustine's Prayer*

The Serenity Prayer can give fresh insights when investors are beginning to face the challenge of persistent low returns, having been spoiled for a generation.

*God, grant me the serenity to accept the things I cannot change,  
the courage to change the things I can,  
and the wisdom to know the difference.<sup>1</sup>*

It is no news that historically low bond yields and high asset valuations point to a low *expected* return world. Meanwhile, many investors have gotten used to strong *realized* returns as rich assets have grown ever richer. Several market observers, myself included, have asked investors to acknowledge this disconnect and to adjust spending plans and investment plans accordingly.

Few investors have shown the “serenity to accept” the lower expected returns in the sense of moderating their future spending plans. Many more have shown “the courage to change” in moving into riskier investments when the market no longer offers the expected returns these investors have grown used to. Collectively, we are due for a disappointment as we cannot all buck the fate of lower expected returns. So it seems “the wisdom to know the difference” has been lacking.

A subset of retirement savers understand that they must save more now that the market offers less, and a few institutions are belatedly lowering their return expectations and planning belt-tightening. Most, however, keep delaying hard choices and follow the youthful St Augustine in praying: *Lord, make me chaste – but not yet.*

This take-risks-and-kick-the-can approach has worked quite well during the past decade – not least thanks to the generous central bankers, for whom even agnostic investors should praise in their evening prayers. The period since the Global Financial Crisis (GFC) has been a time of low growth, low inflation, low interest rates – low everything except *realized* investment returns, it seems. Some say this is because we borrowed returns from the future: not through standard borrowing (although plenty of that took place too) but rather through the windfall gains from ever-lower yields and ever-richer asset valuations. These boosted the post-GFC realized returns but promise even harder times for the rest of the 2020s and/or beyond.

Finally, many investors have adjusted neither their return expectations, nor investment plans, nor spending plans. Wishful thinking can be explained by “rearview-mirror” expectations: Since past returns have been healthy, why should we expect anything different from the future?

Extrapolating the strong market performance since the GFC as an indication of the future would be a wrong lesson to draw. We learn slowly from data, and even a decade is a short period to learn about long-run expected returns, especially if realized returns have been driven by large valuation changes.

While we should be humble about predicting returns, I believe that the next ten years will be characterized by low realized returns, not just by low *expected* returns. I hasten to add that when record-low cash rates are at the heart of the problem, going to cash is not the obvious answer. Any putative market timer will have to be very lucky to get the timing right.

So investors need to take risk to earn any rewards. It is especially important to do this efficiently and intelligently now that the rewards are likely to be meager. And investors should take risks with wide-open eyes when the risk of disappointment – fast or slow – is higher (more on the “how” soon).

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<sup>1</sup>This variant is the best-known version of the Serenity Prayer, originally written by American theologian Reinhold Niebuhr. This version has been used in Alcoholics Anonymous meetings since the 1940s – a linkage that may turn out to be fitting in the future as investors must wean themselves from the addiction of easy money and related windfall gains. In any case, I felt elated when, on a snowy morning jog in early 2021, I saw the connection between my favorite inspirational quote and the low expected return challenge, a key theme in my planned book. For long, the working title of this book was *Investing with Serenity*. In the end I decided to emphasize low expected returns in the title, while highlighting the serenity angle in this Introduction.

## *Serenity Prayer Versus Outcome Bias*

Investing with serenity is not only about calmly accepting low returns. It is about investing thoughtfully, understanding one's investment goals, and figuring out best ways to reach them. We need to make the most when markets offer the least. While on this journey, investors should focus more on the process than outcomes. This is another important connection between the Serenity Prayer and investor behavior. Outcome bias refers to the all-too-common tendency to equate the quality of a decision with the quality of its outcome.<sup>2</sup> Few investors serenely accept an extended period of disappointing performance. Yet, overreacting to past performance is not a recipe for long-run success.

When it comes to realized returns, luck dominates skill over months and even years. Good investments will have bad periods. In relatively efficient markets, competition means outperformance cannot be as reliable as we'd like. We can see consistently successful surgeons or engineers but observe that investors do not achieve comparable consistency – if we measure success by short-term outperformance.<sup>3</sup> Good investors are anchored by market outcomes and relatively close to 50/50 short-term odds around them. Odds of outperformance tend to increase with a longer horizon, but more slowly than many investors accept. A long-run positively rewarded strategy or a skillful investor can have painfully long bad patches. Equity markets do experience losing decades (most recently in 2000–2009) and even Buffett has suffered underperformance longer than a decade.

Statisticians say we may need decades to distinguish luck from skill in investing. Yet, most investors shrug and judge investments based on the past few years' performance – at most. Sadly, it is not enough. In reality, most of us cannot give investments as much patience as is rationally needed. Impatience leads to ill-timed capitulations at asset class level and wasteful fire/hire decisions in manager choices.

There are no easy solutions to this perennial challenge, but we can all try to do better. Investing with serenity is about investors and managers accepting what cannot be changed – that the outcomes over short and even quite long horizons are dominated by luck or randomness. Instead, judgments should focus on what can be controlled: improving expected returns by improving the investment process and decision-making quality.

I understand that this may sound preachy, especially given that some of the systematic style strategies I highlighted in my first book recently underwent several bad years.<sup>4</sup> Yet, this book emphasizes patience as one key investing virtue, so I cannot avoid the topic.

The message is not relevant only to my favorite strategies. More generally, serenity is all about consistent investing: Figure out what you believe in and try hard to stick with it. Inconsistently

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<sup>2</sup>Judging a decision's quality by its ex-post outcome and not by the ex-ante process is called both "outcome bias" and "resulting fallacy" (Duke (2018)). Another related term is "hindsight bias" (seeing past events as more predictable than they really were; "I knew it all along"). Related work by Taleb (2001), Kahneman (2011), and Mauboussin (2012) highlights the difficulty of disentangling luck versus skill, as well as the common tendency to underestimate the role of luck in outcomes.

<sup>3</sup>For example, Warren Buffett's track record is about long-run success, not about implausible short-run consistency. Exceptions to this rule typically involve return smoothing (which conceal true economic fluctuations in private asset funds) or effective market-making gains (high-frequency liquidity provision strategies are partly behind the success of Jim Simons' most famous fund, Medallion, which is anyway closed to outside investors).

<sup>4</sup>This is why I could not publish a manuscript "Patience," now in Chapter 9. It would have sounded too self-serving and outright irritating to some suffering investors. So please don't think I consider patience easy. It is fair to ask underperforming managers if a systematic strategy is broken or a discretionary manager has lost her touch. But also know that, statistically speaking, we tend to rush to judgment too soon.

chasing different long-run successful strategies would likely turn out worse than sticking with one mediocre strategy.

## 1.2. Outline of This Book

Though the Serenity Prayer was written by a Christian theologian, its themes reflect seemingly universal ideals and its origins in the Stoic philosophy seem obvious. Witness the words of Epictetus two millennia ago:

*The chief task in life is to identify and separate matters . . . which are externals not under my control, and which have to do with the choices I actually control.*<sup>5</sup>

Investment success requires good investment strategies *and* good investors. Good investors understand which matters they can control – and focus on these. In the outline for this book, I split the matters into three sections:

- Know your history – setting the stage, especially the low expected return challenge.
- Know your investment opportunity set – my focus here will be on long-run rewarded factors as building blocks.
- Know how to assemble the parts into the whole – through portfolio construction, risk management, ESG considerations, and cost control.

Prescriptions on good investing can be timeless. They are not different when returns are high or low. However, amid low returns, good investing matters even more.

### ***Part I: Investment Winter Ahead***

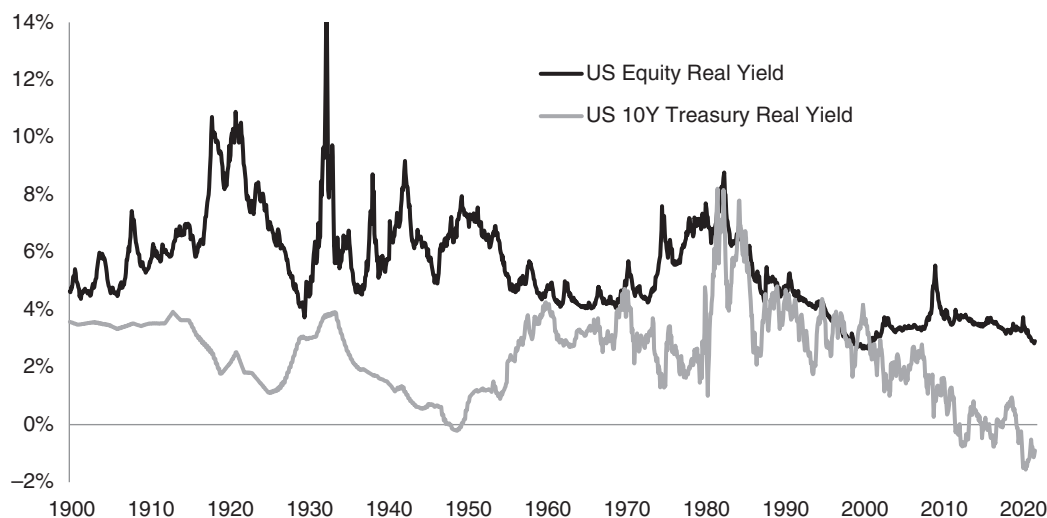
My generation has benefited from windfall gains in almost all asset classes over multiple decades when real yields have fallen and asset valuations have risen, thereby boosting the realized returns. The payback time is near – likely starting in the 2020s. Chapter 2 will stress that harsher investment conditions are ahead, whether through the slow pain of stingy coupons and dividends or the fast pain of losses when rich asset valuations revert to more normal levels.

This is not only a world of low *bond* yields. Virtually all long-only assets appear expensive compared to their own histories. The price of any asset is the sum of the market's expectation of future cash flows discounted to their present value. The common element in discount rates – the riskless rate – is near all-time low. Thus, equities and illiquid assets too appear to have expected returns near record lows; these are just not as visible as they are for bonds.

Figure 1.1 depicts the evolution of simple yield-based expected long-run real returns of US equities and bonds since 1900. The September 2021 real yields of 2.9% and -0.9% are at 2nd and 1st percentile, respectively, over a nearly 122-year window.

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<sup>5</sup>Epictetus stressed that we cannot control what happens to us but we can control how we react to it. His near-contemporary Stoics Seneca and Marcus Aurelius emphasized similar themes, as did Viktor Frankl much later. More personally, I drew lifelong inspiration from how graciously my colleague Rory Byrne lived his last years before succumbing to a brain tumor at the age of 35 – his code was “Do your best with the cards you’ve been dealt.” This book’s subtitle reflects the same aspiration applied to the current market environment. I dedicated my first book to Rory’s memory.



**Figure 1.1** Simple Expected Real Return of US Equities and Treasuries, Jan 1900–Sep 2021

Sources: AQR, Robert Shiller's website, Kozicki-Tinsley (2006), Federal Reserve Bank of Philadelphia, Blue Chip Economic Indicators, Consensus Economics. Notes: Equity is represented by the S&P500 stocks (before 1926 using Cowles data as in Robert Shiller website). The equity real yield is the sum of income and growth proxies. Income is an average of two measures: D/P ratio and half of the cyclically-adjusted E/P ratio (which uses smoother 10-year real earnings in the numerator, and implicitly assumes 50% payout ratio), while growth is assumed to be 1.5% (long-run real EPS growth). No mean reversion is assumed. The real bond yield is the 10-year Treasury yield minus survey-based or statistical inflation forecast for a decade, as in Ilmanen (2011).

We cannot observe expected returns directly; we can only estimate them. Such estimates are typically based on current market conditions (Figure 1.1 is just one example of this forward-looking approach) or on historical average returns. We can complement either empirical approach by theoretical considerations – or simply take discretionary views.

I will emphasize the long-term benefits of humility, especially with market timing. Short-term market timing is hard but even ten-year return forecasts involve wide uncertainty bands. The limits of our knowledge reflect the competitive nature of investing in relatively efficient markets and thus limited return predictability. While we have increasing amounts of data, we still live in a world of small data and low signal-to-noise ratios for all but high-frequency investment strategies. If we contend that the world has structurally changed in recent decades, we have even less data to work with.

After all that questioning of the reliability of expected return estimates, they may be the best we have. So they should be used – with appropriate humility. That expected returns are low is a fact. That realized returns will be low in the rest of the 2020s is merely an opinion.

Chapter 3 will provide historical context on asset allocation practices before describing how the low return environment can hurt various investor types and how these investors have responded. As noted above, many investors have shown more courage to increase investment risk than serenity to adjust lower their spending plans. Serenity is about accepting reality as it is, and doing one's best with it. Serenity is not the same as wishful thinking or unrealistic optimism.

The low return message may make me sound like a Cassandra, but I also have earned the nickname Pollyantti for my penchant to seek silver linings in all kinds of bad news. The rest of the Introduction includes my best set of silver linings – what we can control in this challenging situation.



In any case, a key message from the happiness literature is that happiness equals the difference between reality and expectations. By moderating my readers' expectations on future returns, this book is likely to boost their long-run happiness. You're welcome.

## ***Part II: Building Blocks to Improve Returns***

While expected returns may vary over time, historical average returns give us useful information on which factors have been rewarded over the long run. And if the current valuations are not very far from historical averages, this evidence may also give a good estimate of future expected returns.

Research-oriented investment practitioners and academics have converged over time in their opinions *on which factors have been historically well rewarded*. Empirical evidence over recent decades or even longer histories point to certain asset class premia as well as certain style premia. Their past rewards have been sufficiently persistent, pervasive, and robust to be statistically and economically significant and beyond data mining concerns. Figure 1.2 highlights nine premia with almost a century of evidence; each will be discussed in Chapters 4 and 6. The bars show annual average compound returns over cash since 1926 (left y-axis), while the line shows Sharpe ratios (risk-adjusted returns, henceforth "SRs", right y-axis). Chapters 5 and 7 will also cover illiquidity premia and manager-specific alpha, but we do not have nearly century-long evidence to back them up.

The first bar is the global equity premium, 6.2% per annum, justly the most important source of return and risk for most investors. Yet, there are many other rewarded factors.

Three other asset class premia – the term premium (between long-dated government bonds and cash), the credit premium (between corporate credits and comparable government bonds), and the commodity premium (in a diversified basket of commodity futures) – earned 1.8–3.5% annual average rewards.

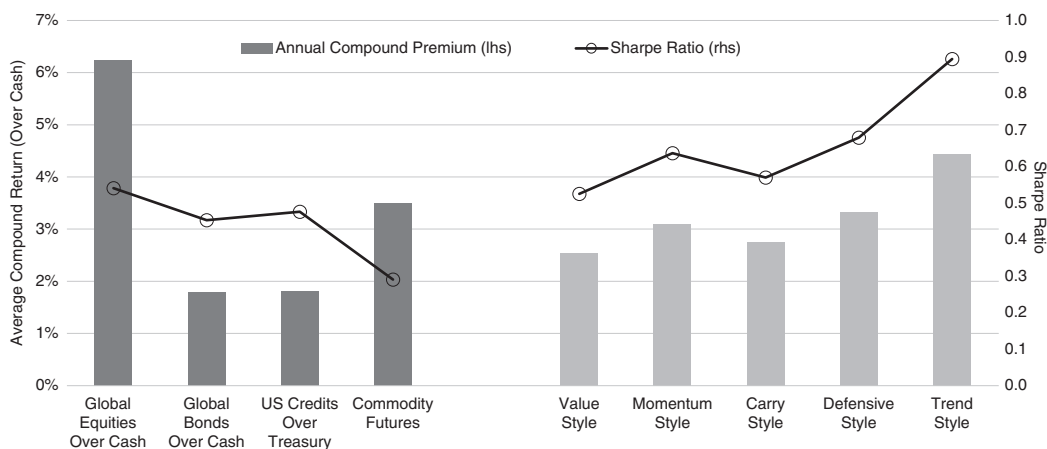
The list of rewarded factors has got longer in recent decades. Evidence on alternative risk premia, notably five style premia, has become more widely known. Favoring cheap assets (value), recently outperforming assets (in relative sense in momentum and in absolute sense in trend), high-income assets (carry), and stable or high-quality assets (defensive) are styles that have performed well within many asset classes – and better as a diversified composite shown here. The performance of long/short style premia is presented before trading costs and fees, which together with superior diversification explains the high SRs (ranging from 0.53 for value to 0.89 for trend).<sup>6</sup>

After costs and fees, style premia would have been lower, and the fact that these ideas are now widely known among investors ("their alpha has morphed into alternative beta") may further reduce forward-looking return estimates.

Investor interest in style premia – both long-only "smart beta" factor investing and long/short alternative risk premia variants – grew significantly in the 2010s. However, the disappointing performance in recent years – especially losses in the stock selection value strategy – led many investors to give up on style premia.

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<sup>6</sup>The historical average return levels depend crucially on the leverage and volatility applied to these long/short strategies. Sharpe ratio (SR) is a more robust (scale-invariant) performance metric than average return. I will thus use SRs extensively, despite their own shortcomings. As a reminder, SR is the ratio of average over volatility for any investment's excess return over cash. Here I conservatively target bond-like 5% volatility per style, which gives 2.5% to 4.5% average premium per style.



**Figure 1.2** Annual Excess Returns and Sharpe Ratios of Main Asset Class Premia and Alternative Risk Premia, 1926–2020

Source: Data from AQR. Notes: Geometric means and Sharpe ratios of nine return series, which exclude cash return but are before subtracting trading costs and fees. Equities and (government) bonds are GDP-weighted multi-country composites. Credit is a US corporate portfolio over matching Treasury. Commodity is an equally-weighted portfolio of available commodity futures. The five long/short style premia use simple specifications applied in many asset classes (cf. Chapter 6 and Ilmanen et al. (2021a)) and one-month implementation lag, and are scaled to 5% volatility.

Historical evidence does not get better than for these nine premia. If you find differently, please let me know. For example, evidence on illiquidity premia in private assets or on the small-cap premium is more limited than many believe – a key topic in Chapter 5.

One way to view the long-term evidence in Figure 1.2 (and further empirical evidence later in this book) is as “base-rate information.” Kahneman (2011) and Mauboussin (2009) discuss the common “base-rate neglect” where decision-makers focus too much on the specific situation at hand and ignore the general probabilities. Investors should recall that we all are prone to such neglect, even if they can overlay their specific information or views on top of base-rate information provided here. This book serves carrots and broccoli as the main items on the investment menu, not much of the sweet stuff.

Many investors count on manager-specific “alpha,” but empirical evidence argues against confident predictions of positive alpha. Chapter 7 reviews evidence on active versus passive investing and methods for demystifying active manager returns.

I then summarize risk-based and behavioral forces that may explain various asset class and style premia, before asking questions like “Who is on the other side of these premia strategies?” or “How does one sustain conviction and patience in a chosen approach through its bad times?” (Chapters 8 and 9).

Finally, I go geeky in Chapter 10 and introduce the four equations that even equation-averse people should know about investing.<sup>7</sup> I also offer a brief tour of some key predictive techniques (e.g. time-series versus cross-sectional approaches to estimate expected returns).

<sup>7</sup>I found 30-odd years ago that I belong to the majority who naturally read text and gloss over equations in any article, while most of my peers in the Finance Ph.D. program were inclined to do the opposite. I hope that belonging to the majority has helped me serve better as a bridge between academia and practitioners.

### Part III: Putting It All Together

Having written the mammoth book *Expected Returns* and soon afterwards joined AQR in 2011, I was aware I had focused on the already-overrated part of investment management, and I promised myself to do justice to the often-overlooked parts. So the first AQR paper I wrote – with my colleague Dan Villalon – was deliberately called “Alpha Beyond Expected Returns.”

We began with a picture of apple harvesters (Figure 1.3) and the following introduction:

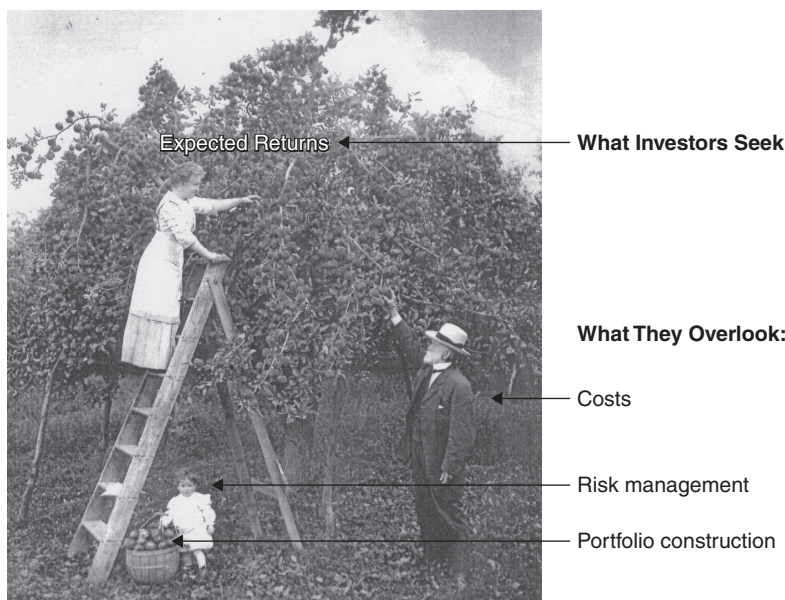
*Investors spend much of their time on selecting active investments or active managers, which is nearly a zero-sum game. While doing so, they underutilize diversification, risk management, and effective implementation. We call these less glamorous activities collectively as sources of “alpha beyond expected returns” where alpha is loosely defined as improved risk-adjusted returns. In today’s low-rate environment, it is even more important that investors do not let any source of alpha go to waste.*

*If investing were compared to apple harvesting, the accompanying picture illustrates the classic mistakes made when reaching for the top (excessively focusing on expected returns), while missing the low-hanging fruit. Look at the poor quality of diversification – all apples in one basket. What should we say about risk management when the poor girl is standing under the ladder? And cost control is hardly impressive when we see one overseer and one active worker. Do not let your investment process be like this harvesting effort!*

*More seriously, investors should strive to add value in every step of the investment process: expected return generation, portfolio construction, risk management, and cost-effective execution.*

The parallels are tasty, and this picture also serves as a good outline for the last section of this book: Putting It All Together. Chapters 12, 13, and 15 respectively focus on portfolio construction, risk management, and cost control.

Mean-variance optimization is a common workhorse in portfolio construction, despite its various pitfalls. I emphasize the role of constraints (on, say, illiquidity and leverage) in driving



**Figure 1.3** Apple Harvesting Parable of Bad Investing Practices

Source: AQR. Originally from Penrose Chamber of Commerce (<http://www.penrosechamber.org/>). Text additions are our own.

actual asset allocation choices. When it comes to risk management, survival comes first. Cost consciousness is important but thoughtful investors do not minimize costs or fees but maximize net returns.

Even before those chapters, I present an ode to diversification. Diversification remains the one almost-free lunch in investing, though its costs include unconventionality and lesser intuition. Diversification is short stories and long evidence.

The hot topic of ESG (environmental, social, governance) investing deserves its own chapter. When judging its return impact, we don't have enough data and the world is changing, so priors matter a lot. Financial theory suggests that the world offers more trade-offs than win-wins in the long run. Still, ESG "sinners" may lag in a transition phase, and ESG-oriented investors may accept some long-run cost to virtue.

The last chapters argue that strategic diversification trumps tactical timing as a method of improving investment outcomes and that multiyear return chasing is a premier bad habit among investors.

These are the big-picture ideas, but there is inevitably much more to good investing. Given the broad subject, I largely keep a bird's eye view in this book but occasionally zoom in on selected details.

### 1.3. On Investment Beliefs

While this book describes what I consider good investing practice, it does *not* provide investment advice. This is not just a compliance disclosure, but it reflects both the appropriate humility on a challenging topic and my wish to help you stick with a plan. I try to provide useful information and insights for investment decision-making, but you (or your organization) must make your own choices.<sup>8</sup>

It is hard to come up with investment edges, but it is easy to forfeit those edges. Even if you had skill to identify return sources which give you an edge, you could waste them without patience, diversification, or risk and cost control. So while I have strong opinions on good long-run return sources (certain asset class and style premia) and on helpful investment practices, you need not share mine. Choose your own beliefs and try to stick with them.

I list next some of my core leanings when it comes to good investing. Each opinion below arguably errs toward humility and away from overconfidence, in order to enhance long-run performance. They are evidence-based opinions, as later chapters will attest.

- I prefer diversification over concentrated positions. One test of how much you really care about diversification is your willingness to use leverage to harness the power of multiple rewarded factors. Most investors say no and let equity market directional risk dominate their portfolio.
- I believe more in style premia than illiquidity premia as long-run return sources.

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<sup>8</sup>There is always some tension between one-size-fits-all ideas of good practices and customization. This book leans toward the former as I share the broad ideas that I find relevant for most investors, whereas how you apply them depends on your specific beliefs, characteristics, and preferences.

In any case, there are many winding paths to investment success. Some paths involve very different investment choices from mine (e.g. more illiquids, more concentrated, more discretionary, more tactical . . .). This is as it should be and that's what makes a market. The only investment that everyone can simultaneously hold is the cap-weighted portfolio; all other strategies need someone on the other side.

- I prefer portfolio perspective on any investment over narrow framing. That is, I ask what this investment will do to my overall portfolio risk and return, not how it behaves alone: so, top-down rather than bottom-up.
- I prefer strategic long-term diversification over bold tactical timing. This preference reflects the powerful benefits of diversification, limited tactical return predictability, and the dangers of impatience.
- I prefer holding portfolios that are resilient across many different macro scenarios instead of portfolios that perform well when my investment view turns out to be right.
- In the same spirit, survival comes first in risk management. The chance to hit view-based jackpots is a luxury that for many comes at the cost of lower long-run returns. Risk management should ensure the ability to fight another day.
- I prefer probabilistic thinking over stories. The former emphasize uncertainty around future outcomes (as well as in judging past outcomes), while stories tend to anchor on one view.
- I prefer systematic investing over discretionary approaches. Besides providing discipline, systematic investing is more evidence-based and relies more on diversification. It comes with its own pitfalls, such as vulnerability to structural changes and less intuitive narratives.
- In sum, my investment beliefs favor humble forecasts and bold diversification.<sup>9</sup>

I get it, this may sound boring and too abstract. If good investing were easy, fun, and exciting, its fruits might really get “arbitraged away.”

## ***Miscellanea***

I have already referred to my first book, *Expected Returns* (2011). I did not expect to write another book, but as I kept learning more in my AQR years, the temptation grew. The lockdowns and travel restrictions gave me an opportunity in 2020–21, and I took it.

The new book describes my matured vision on expected returns of various investments (Part II), but it also presents them in the broader historical context of the low-return challenge (Part I) and reviews how the pieces can be efficiently assembled (Part III). I try to keep this book shorter despite its broader subject matter. Admittedly, the bar was low as *Expected Returns* ran up to 550 pages.<sup>10</sup>

A few other points are worth highlighting:

- This book is mainly for professional investors and financial advisors but also contains many lessons to strategically-minded individual investors.
- I have talked to the majority of the world’s largest institutional investors during the past decade(s) and even directly advised some of them. They all think about similar questions, but

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<sup>9</sup>Inspired by Kahneman-Lovallo (1993) “Timid Choices and Bold Forecasts” which describes two mistakes in managerial decision-making that fortuitously tend to offset each other.

<sup>10</sup>One way to keep the page number down is by not including all the deserving references. I capped them near 500 and focused on more recent research – apologies to others. For excellent books with as broad coverage as this one, see Lussier (2013), Ang (2014), and Pedersen (2015). I also recommend viewing the *Words from the Wise* series in aqr.com, where we interviewed many luminaries (John Bogle, Charley Ellis, Robert Engle, Marty Leibowitz, Harry Markowitz, Richard Thaler, Ed Thorp, and Roger Urwin) who have influenced our thinking. For two other wonderful sets of interviews and profiles of modern finance giants, see Towle (2014) and Lo-Foerster (2021).



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they can come up with different answers. I will cover some of these here but I will not name names, except for some discussion on publicly-known approaches like the “Norway Model,” the “Endowment Model,” and the “Canada Model.”

- As noted in the Acknowledgments, this book owes a large debt to the work of my AQR colleagues. Admittedly, this book gives an AQR-colored vision on good investing, but I strive to give a balanced picture.
- As I want to avoid letting this book become dated soon, I will steer clear of hot topics at the time of writing, such as meme stocks, Robinhood, bitcoin, NFTs, and SPACs. I share the worry with other old fogeys that many get-rich-quick efforts will end in tears and may discourage a generation of investors from the more boring but necessary type of retirement saving and investing.
- On the many footnotes: I use them to improve the flow and to actively segment two kinds of readers – those who like footnotes and those who don’t know what they are missing by not reading them.

Finally, I am well aware of the reputed headwinds that sequels frequently disappoint and that non-fiction books are becoming an outdated mode of communication. If I can provide enough insights and structure within two covers to help readers navigate the low-return challenge, I might overcome those twin gales. You’ll be the judge.



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