



Reflections on Time and Structure

Part II

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*Having discussed the effects of a time horizon on an investment portfolio in Part I, we now turn to the tools of risk mitigation. In this Part II, we examine the related concepts of **diversification** and **hedging**. While both reduce or offset risk, each is applied in a very different manner – and their results will likely differ in the time of greatest need.*

Reflections on Time and Structure: Part II

An investor's risk tolerance is defined by her ability and willingness to lose some or all of an investment in exchange for greater potential returns. More aggressive investors possess a high-risk tolerance, and will chance losses in the short run in exchange for the potential to achieve a higher long term return. By contrast, more conservative investors, with greater risk aversion, favor investments less likely to fluctuate as much in value and, therefore, less likely to generate large losses. In exchange for this safety, however, the more risk averse investor parts with the potential for higher returns.

Expressed in terms of asset allocation, the more aggressive investor will tend to commit a greater portion of her portfolio to stocks. As we explained in Part I, the increased volatility of an asset class is accompanied by the potential for higher returns. On the flip side, the more conservative investor's portfolio will include a higher fixed income percentage, as bonds tend to offer less volatility, but lower potential returns.

As Figure 1 below illustrates, traditional asset classes and alternative asset classes have both outperformed cash over various intervals of time, representing the basic tradeoff of risk and reward and confirming the idea that risk is efficiently priced by the markets at the individual asset class level. Students of finance, for example, are well aware that the equity risk premium represents the excess return that investing in the stock market provides over the risk free rate and functions to compensate investors for bearing the higher risk of equity investing.¹

¹ See Zvi Bodie, Alex Kane and Alan J. Marcus, INVESTMENTS (4th ed., 1999) at 133 (defining the equity risk premium as the difference between the expected holding period return of an index stock fund and the risk free rate).

Figure 1. The Annual Performance of Various Asset Classes

(January 1, 1997 – December 31, 2016)

Asset Class	Represented By	Avg. Annual Return	Standard Deviation
Cash	S&P 0-3 month U.S. T-Bill Index	0.00%	-
Bonds	Bloomberg Barclays U.S. Aggregate Bond Index	5.29%	3.44
Large Cap Stocks	S&P 500 Index	5.69%	15.28
Commodities	Bloomberg Commodity Index	-1.65%	16.29
International Stocks	MSCI EAFE Index	1.77%	16.91
Small Cap Stocks	Russell 2000 Index	6.82%	20.05

The starting point for any asset manager is portfolio management – the deliberate selection of assets to generate gains or income. Risk management, in turn, concerns the exposure profiles of those chosen positions. While portfolio management describes the process of establishing positions in actual securities such as equities, fixed income and alternatives, risk management concerns the proper combination of those positions or the establishment of offsetting positions.² And, in dialing a portfolio to its proper risk balance, the effective investment professional is likely to employ the techniques of diversification and hedging. A look at the attributes and limitations of each follows.

Diversification

An equity investor with a semester of Finance 101 under his belt and looking to invest \$10,000 in the market would probably look to spread his money over several stocks in different industries. Such a strategy reduces the idiosyncratic risk of any single company or industry group, protecting the investment against localized risk. Absent the strongest conviction on Company A alone, an investor would more likely tie his fortunes to a basket comprised of Companies A, B and C. The resulting risk and return would then be a function of the prospects of a mix of the three companies instead of subject to the ups and downs of an individual firm. Whether he knows it or not, an investor buying a basket in place of a single stock position is employing the tool of diversification to reduce individual event risk.

² In establishing offsetting positions, derivatives have particular appeal because many securities are difficult to sell short. Also, buying and selling securities is often more capital intensive than placing derivative positions.

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In finance, the concept of diversification finds root in the work of the Nobel Laureate, Harry Markowitz. His Modern Portfolio Theory observed that investments must be understood not solely by the returns they might generate, but also by the risk they employ. For disciples of Markowitz, the “risk” of a portfolio can be measured by the standard deviations of its returns. And, higher returns might be generated by taking on higher risk.

While a portfolio’s expected return is the weighted average of its components’ expected returns, the standard deviation of a portfolio is less than the weighted average of its components’ standard deviations. This means that portfolios of less than perfectly correlated assets always offer better risk-return opportunities than the individual component securities on their own.³ Markowitz was able to prove mathematically that if pairs of investments did not move in lock-step – if the correlations between assets were low – then the overall volatility of a portfolio would be reduced with the introduction of additional securities.⁴ In fact, the lower the correlation between the assets, the greater the gain in efficiency as additional securities are added to a portfolio.⁵ In short, “[d]iversifying investments leads to portfolios with higher expected returns and lower standard deviations.”⁶

Diversification has become the most time honored tactic for managing the risk profile of a portfolio over longer time horizons while optimizing expected returns. Yet, the efficacy of diversification as a risk management tool is hindered by two critical shortcomings. First, diversification is ineffective for controlling risk of substantial loss from severe market conditions over short time horizons. Next, the effect of diversification becomes compromised in market conditions that draw the correlations among various assets closer to each other. As a consequence, diversification tends to fail dramatically in the most severe market conditions – exposing investors to acute loss in the short term.⁷

Diversification reduces the risks associated with particular attributes of individual investments to a trivial impact on the portfolio as a whole. For instance, the risk of an individual stock can be bifurcated into idiosyncratic risk and systematic risk. Idiosyncratic risk is particular to the individual security and may be diversified away by holding a basket of stocks in place of a single position. Systematic risk, however, is attributable to the market as a whole and cannot be diversified away. Thus, diversification is simply not intended to control the risk of loss during market crashes when systemic declines reduce the value of an entire asset class. As one academic observed: “When there is simply no place to hide, even the most

³ See Bodie, Kane and Marcus, *supra* note 1 at 207.

⁴ See Marc Odo, *Diversity Doesn’t Always Equal Diversification*, (Feb. 2, 2016) available at <http://www.etftrends.com/2016/02/diversity-doesnt-always-equal-diversification/>

⁵ See Bodie, Kane and Marcus, *supra* note 1 at 207.

⁶ *Id.* at 218.

⁷ JoNoel Amenc, Felix Goltz and Stoyan Stoyanov, *A Post-crisis Perspective on Diversification for Risk Management*, EDHEC-RISK INSTITUTE (May 2011) available at <http://www.edhec-risk.com/features/RISKArticle.2011-04-27.5636/attachments/A%20Post-crisis%20Perspective.pdf>

sophisticated portfolio diversification techniques are expected to fail.”⁸

More sophisticated diversification tactics employ alternative investments to introduce portfolio segments uncorrelated to traditional fixed income and equity asset classes. Thus, the portfolio benefits from the reduction of exposures to the systematic risk of each segment. Yet, whether applied at the security level or across asset classes, this process of “spreading” of risk is diversification – and its efficacy will depend on the persistence of the observed correlations between the chosen investments of a particular portfolio. Here, it is worth noting the observable phenomenon that, at times of crisis, correlations have tended to move toward one.⁹

In severe markets, investors seeking to generate liquidity and preserve capital tend to sell off risky assets of all types. By doing so, the correlation between fixed income, equities and alternatives converge as the contagion sweeps across investment segments. The financial crisis of 2008 provides a stark example of this phenomenon “when sharp downturns in almost all asset classes painfully highlighted the limits of diversification as a risk management technique.”¹⁰ A market observer thus described the reliance on diversification as a risk mitigation tool as follows: “[i]t works best when you don’t need it to (i.e., in a rising market) and worst when you desperately want it (i.e., in a crashing market).”¹¹

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While increasing the number of securities (or asset classes) in a portfolio will reduce nonsystematic risk, systematic or market risk will remain. And, although systematic risk cannot be diversified out of a portfolio, it can be hedged. Hedging, in fact, is the primary mitigation mechanism for market risk and the concern of the section that follows.

Hedging

Diversification is the first line of risk mitigation – optimizing a portfolio’s risk profile by minimizing those risks attributable to its individual investments. The portfolio’s remaining risk is qualified as “systematic” or “market” in nature, meaning that the portfolio’s value will swing with the benchmark market. And, residual risk can result in severe losses that tend to manifest quickly when markets decline dramatically. To reduce the risk of loss stemming from short term market

⁸ Lionel Martellini, *A better approach to risk management*, FINANCIAL TIMES (Oct. 24, 2010).

⁹ See, e.g. Yacine Ait-Sahalia and Dacheng Xiu, *Increased Correlation Among Asset Classes: Are Volatility or Jumps to Blame, or Both?*, (Aug. 25, 2015) at 2 (“The recent financial crisis has been accompanied by an across-the-board increase in correlations among asset classes, with obviously unfortunate consequences for portfolio diversification.”).

¹⁰ See Martellini, *supra* note 8.

¹¹ See Kenneth G. Winins, *5 Big Mistakes Investors Make When They Diversify*, Forbes (Feb. 5, 2015). See also G. Scott Clemons, Brian Nelson and Thomas Martin, *BBH’s Approach to Portfolio Construction*, InvestorView (Q4 2016) (“Correlations rise along with fear, and the benefits of diversification evaporate.”).

gyration, an investor must expand beyond diversification to other means of risk management.

To offset the systematic risk, a financial manager might establish a hedged position. Hedges come in a variety of shapes and sizes. Likewise, they can vary significantly in cost and complexity. A simple hedge might be constructed to offset the dollar changes in the underlying portfolio position, and might be accomplished with futures, options or other derivatives. Hedging directly reduces the risk of loss in the value of a particular asset. To hedge a position is to take an offsetting position. For a portfolio with a market value of \$1 million, and the S&P 500® Index trading at 2,000, two S&P 500® Index futures contracts might be sold to effectively extinguish market risk.¹²

Hedging may also be used tactically. Consider the investor with a portfolio invested in the broader market. She is bullish on the market over the long-term but anticipates a significant downturn in the next two months. If trading was costless, the investor might liquidate her portfolio, placing the proceeds in T-bills for two months only to re-establish the positions after the storm passed. In practice, such a trading strategy is likely to involve unacceptable trading costs and tax realizations. Alternatively, the investor could construct a hedge, selling index futures to offset the market exposure. In such a case, when the portfolio declines along with the broader market, the futures contracts will provide an offsetting profit. And, if the hedge references the very same underlying(s) as the portfolio itself, an investor would not need to rely on the persistence of diversification to enjoy the full protection the hedge affords.

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By establishing a position in offsetting investments, hedging reliably protects against loss due to market risk. However, the safety offered by hedging entails costs, either in the form of expended capital or limits on potential returns. Investors generally must weigh the following considerations when evaluating a hedging tactic:

- *Risk Tolerance*: Hedging may be employed to reliably curtail losses to varying degrees. A hedge may reduce the amount of loss that results from a market decline, or it may provide a form of insurance to offset entirely losses from certain declines. Investors should assess their tolerance for loss in order to determine the type and extent of protection required.
- *Time Horizon*: Investors may recover from severe loss over time, but investors with shorter horizons may need to hedge against acute market declines or else withdraw from risky assets altogether.
- *Cost*: Hedging is a more costly technique than diversification. Investors must weigh the safety that a hedge affords against its cost.

¹² Each futures contract represents the index level times a multiplier of \$250 per index point (or \$250,000 per contract). E-mini S&P 500® Index futures are also available with a \$50 multiplier per index point. In addition, partial hedges are also possible.

Designing Product for Risk Management in the Modern Portfolio

While liquid alternative funds generally utilize hedging as part of an investment strategy, they tend to do so in a dynamic fashion in an attempt to optimize the risk/reward trade-off or reduce a fund's correlation to traditional asset classes. Unsurprisingly, the results are variable, unpredictable and subject to management risk.

While hedging represents an effective risk management technique, its application has generally been confined to the investment portfolios of corporations and institutional investors. The dearth of hedging in the portfolios of individual investors stems from the practical challenges of constructing a hedge. A hedge is typically accomplished through the use of futures, options or other derivatives – such instruments difficult for individual investors to access and complicated to trade. Historically, individual investors enterprising enough to pursue trading in derivatives have done so for purposes of speculation rather than risk management, and often with unfavorable results.¹³ Over the years, the dismal record of individual investors speculating with derivatives has caused brokerage firms and their regulators to adopt measures to divert investors from the derivatives markets. As appropriate as such actions may be, they complicate immensely the ability of investors to manage systematic risk. As a consequence, the average investor remains relatively defenseless against severe market declines.

The crisis of 2008 inflicted devastating losses on many portfolios, with jarring consequences for those investors nearing retirement or confronting other significant life events. Since then, investors have become increasingly attracted to strategies with the potential to reduce the risk of significant losses.¹⁴ Thus far, the asset management industry has responded with an expanding menu of mutual funds and ETFs that offer the average investor a variety of alternative investment strategies, including equity long/short, market neutral and managed futures strategies. This “liquid alternatives” category now accounts for more than \$175 billion of assets in 2016, reflecting a significant growth from roughly \$85 billion in assets in 2011.¹⁵

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¹³ See Rob Bauer, Mathijs Cosemans and Piet M.A. Eichholtz, *Option Trading and Individual Investor Performance*, *JOURNAL OF BANKING & FINANCE* 33 (2009) 731-746

¹⁴ Aymeric Forest, *Effective Downside Risk Management*, Schrodgers Talkingpoint (November 2012) available at <http://www.schrodgers.com/staticfiles/schrodgers/sites/ukInstitutional2010/pdf/effective-downside-risk-management-nov2012.pdf>

¹⁵ See Stephen Foley and Mary Childs, *Liquid alternative mutual funds leave investors disappointed*, *FINANCIAL TIMES* (May 22, 2016).

¹⁶ For a discussion of the plateauing of flows into these funds and the underlying causes, see Michael C. Macchiarola, *The Natural Plateauing of Liquid Alternative Funds: What Comes Next?*, Olden Lane Whitepaper No. 3 (Oct. 2016) available at http://oldenlane.com/uploads/documents/OldenLane_TheNaturalPlateauofLiquidAlternativeFundsWhatComesNext.pdf.

major market benchmarks in a form affording (1) simple and discernable risk/reward trade-offs, (2) predictable outcomes and (3) reasonable cost.

In 2010, one of the more insightful academic observers of the asset management industry issued the following call:

“Meeting the challenges of modern investment practice involves the design of novel forms of investment solutions customized to meet investors’ expectations.

These new forms of investment solutions rely on sophisticated exploitation of the three approaches to risk management, namely risk diversification (key ingredient in the design of better benchmarks for performance-seeking portfolios), risk hedging (key ingredient in the design of better benchmarks for hedging portfolios) and risk insurance (key ingredient in the design of better dynamic asset allocation benchmarks for long-term investors facing short-term constraints), each of which represents a largely unexplored potential source of added value for the asset management industry.”¹⁷

The industry seems to have answered the call in respect of the first approach. What remains to be accomplished, however, is a meaningful attempt to address the latter two. Such an effort would go a long way toward closing the persistent gap between the average investor’s portfolio and the best practices of modern risk management.

¹⁷ See Martellini, *supra* note 8.



ABOUT OLDEN LANE

Olden Lane is an innovative financial services firm dedicated to the design of practical investment solutions to address the challenge of portfolio optimization for institutional and individual investors alike. We create, develop, and market the next generation of alternative investment products, utilizing both registered and unregistered investment vehicles.

Our focus on product structuring, fund design, and distribution enables us to capitalize on the opportunities available through specific investment vehicles and distribution channels. We have assembled a team of professionals with refined insight and exceptional experience in this area.

Established in 2015, Olden Lane is grounded in a culture of creativity, operational excellence, and independent perspective. Transparency and clarity are the foundation of our work and the catalysts of our competitive edge in an underserved market.

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