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Concentrated Stock Portfolios

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CAMBRIDGE ASSOCIATES LLC

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Executive Summary

- Many families have significant wealth tied up in the publicly traded shares of a single firm. Concentrated exposure to a single stock—often the family's original source of wealth—represents a significant risk to the family's wealth and its future spending and charitable-gifting power. Single stocks, on average, are about 68% more volatile than a diversified portfolio, and are much more crash-prone. This greater risk is generally uncompensated, with single stocks offering a lower return, on average, than a diversified portfolio. Investors who are not in a position to control the company's operations and who do not have confidence it will outperform can generally benefit from paring back their exposure.

- Emotional ties to the company that may have made the family wealthy can discourage diversification. Additional impediments to diversification include: **anchoring** to a particular reference price ("I will not sell until the share price gets back above $100"), **loss avoidance** (investors tend to prefer avoiding losses, such as the guaranteed loss associated with capital gains tax, to acquiring gains), and an **attraction to long shots** (an investor tendency toward over-optimism about favorable low-probability outcomes).

- For families who commit to reducing their single-stock risk, a variety of strategies are available. **Outright sales** are straightforward and effective (these can take place immediately, or can be structured over time with covered calls to ensure a disciplined approach and add income). For families who have charitable goals, **granting concentrated low-basis shares to a charitable investment pool** (such as the family's private foundation, to a donor-advised fund, or to a community foundation) is a simple yet effective strategy to permanently eliminate exposure to the concentrated position. For temporary hedging, **zero-premium collars** can be effective.[1] ■

[1] Over time, the costs of a hedge will add up and depress the return of the hedged position, so hedging a concentrated position is by nature temporary.

Many families have significant wealth tied up in the publicly traded shares of a single firm. This stock—often the company that is the family's primary source of wealth—can hold strong emotional ties. However, this non-diversified exposure to one business, even if that business has boasted stable cash flows historically, also represents a significant risk to the family's wealth and its future spending and charitable-gifting power. Concentration creates wealth, and it destroys wealth. That is, few family dynasties have been created by *starting out* with a modest investment in a diversified portfolio, but many such dynasties have been diminished by continued overconcentration in the shares of one company.

This paper highlights strategies to mitigate single-stock concentration to preserve wealth for future generations or future charitable gifting. Our focus is on U.S.-based taxable investors who hold concentrated positions in single-listed stocks. We begin with an overview of why investors are tempted to hold concentrated stock positions and the risks they face from not diversifying. We then address several strategies available to limit or eliminate the investor's concentrated exposure to the single stock, describing both strategies we favor (in certain situations, at least) and those we would avoid. Sales (either immediate, or structured with covered calls) and charitable grants are simple yet effective, and for temporary hedging, zero-premium collars can be effective. Diversifying away from a concentrated position is most often the best way to preserve wealth.

The Reluctance to Diversify

The still-developing field of behavioral finance provides a lens into some of the most common impediments to selling a concentrated stock position and diversifying the portfolio: emotional ties to the stock and cognitive biases. The stock has likely made the investor wealthy, typically because he/she, a family member, or an ancestor grew the company, giving the investor a strong emotional connection to the investment. Perhaps the stock was inherited from a beloved family member, or perhaps the family's name is attached to the company. In addition to the emotional ties, some of the most common behavioral biases that lead investors to hold on to concentrated positions are as follows:

- **Anchoring and reference dependency.** Investors tend to anchor to an arbitrary or inappropriate reference point. For example, an investor may say: "I will not sell Company A until the stock price hits $100" or "I will not sell until the price gets back to $100."

- **Loss avoidance.** Research indicates that the prospect of taking a loss is significantly more impactful to investors as the prospect of a gain. Therefore, some investors hold on to a concentrated stock position to avoid the guaranteed loss from capital gains tax at sale and its associated decrease in wealth.

- **Overconfidence.** Confidence implies a realistic level of trust in one's abilities, while overconfidence implies an overly optimistic assessment of one's knowledge or control over a situation. Concentrated stock investors may have deep knowledge about the company, which may give them confidence in the company's longevity and ability to succeed. Diversifying into unknown stocks, however, means buying companies in which an investor is not as familiar or confident.

- **Regret avoidance.** Watching a stock rise can generate regret on the part of those who have sold the stock; fear of this regret can discourage investors from taking action.
- **Attraction to long shots.** Investors tend to be overly optimistic about the possibility of successful, low-probability outcomes, and are attracted to potential payoffs that are akin to lottery tickets. Returning to the anchoring example, Company A is selling for $50, and the probability of returning to $100 is very low, but the investor holds. Recall which party consistently succeeds in lottery games: the government entity *selling* the tickets.
- **Underestimating tail risk.** Investors tend to underestimate the probability of extremely bad outcomes. The possibility of a tail-risk event, like a bankruptcy, is ignored.

Selling a concentrated stock position is difficult and often involves complex emotional issues for most investors.[1] However, as we will demonstrate, holding a concentrated stock can imperil wealth preservation.

[1] For additional insights on these and other behavioral concerns, please see Boyle et al, "The Enviable Dilemma: Hold, Sell, or Hedge Highly Concentrated Stock?," *The Journal of Wealth Management*, Fall 2004, pp. 30–44.

Why Are Concentrated Stock Portfolios Risky?

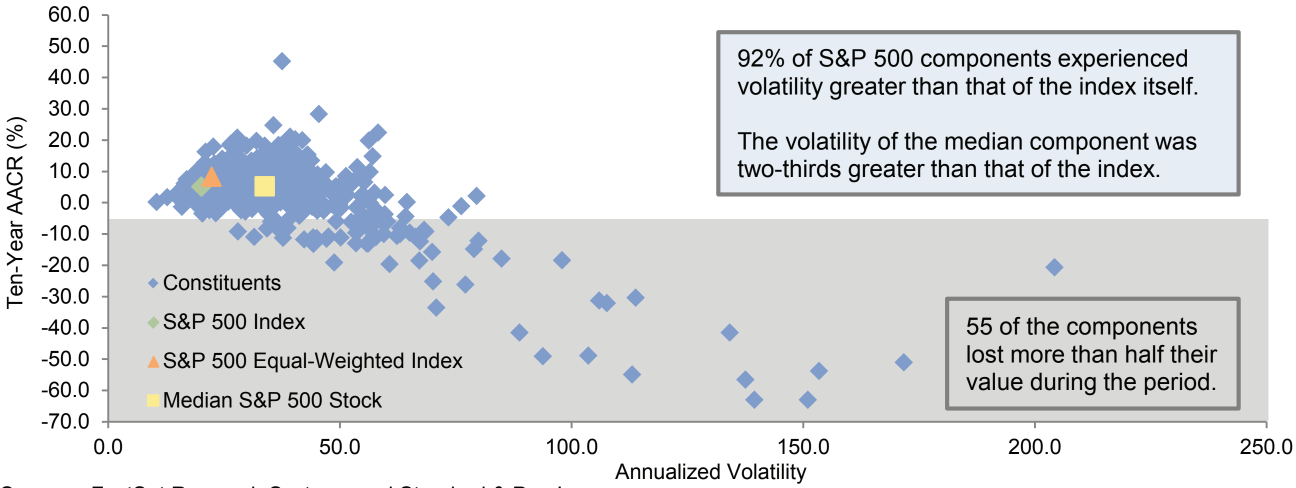
Portfolios with diversified stock exposure have plenty of equity market risk, to which anyone who owned an equity mutual fund in 2008 can attest. But concentrated positions expose the portfolio to significant stock-specific (i.e., idiosyncratic) risk, layered *on top of* the equity market risk that all stocks contain. Idiosyncratic risk can come in many forms, including regulatory changes (for example, PG&E's deregulation and subsequent bankruptcy); increased competition, obsolescence, or fading product demand (Kodak, The New York Times Company); ill-fated mergers or unfortunate management decisions (Time Warner merging with America Online); overstretched balance sheets (Lehman Brothers); environmental disasters or spills (Union Carbide); or fraud (Enron).

One single stock is generally much more volatile than a diversified portfolio of stocks because in a portfolio the negative stock-specific events of one stock may be offset by the positive stock-specific events of other stocks. Figure 1 depicts the ten-year annualized volatility and returns of the S&P 500 Index and its individual component stocks. The volatility of the median individual component stock was 68% greater than the index, and only 8% of the individual stocks in the index had lower volatilities than the index itself.

Diversification significantly reduces not just volatility, but also the risk of very poor returns. More than one in ten index components shown in Figure 1 delivered a cumulative return of -50% or worse over the full ten-year period (and many more dropped more than half from their peak value at some point during the period). Figure 2 shows the percentage of equities that fell in value by 50% or more

Figure 1. Ten-Year Annualized Risk and Return of S&P 500 Index Constituents

As of June 30, 2013

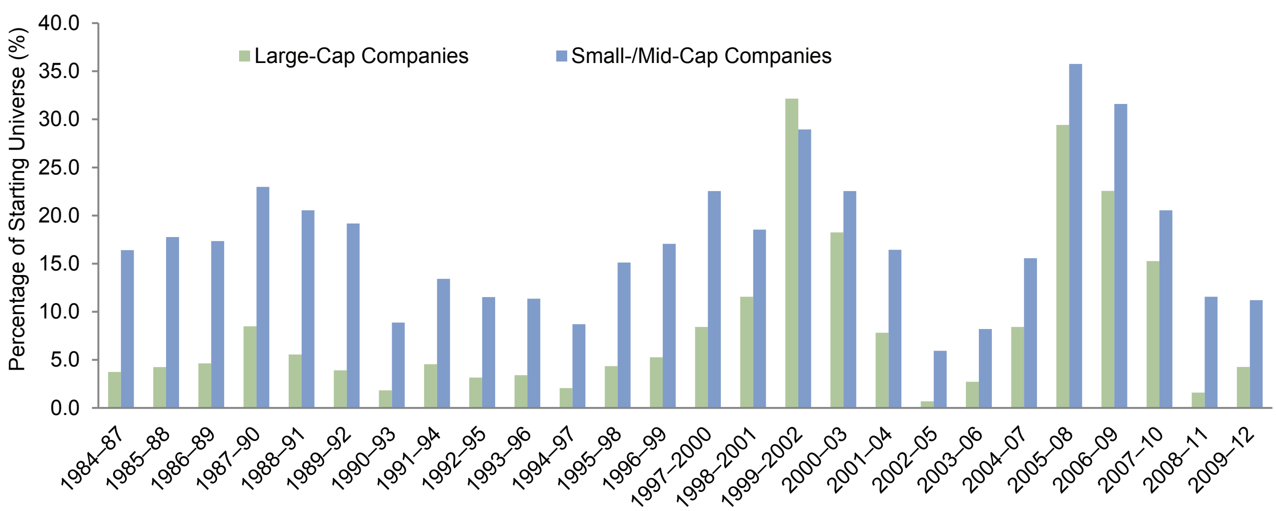


Sources: FactSet Research Systems and Standard & Poor's.

Notes: Full ten-year period AACRs and volatility are included for 365 constituents of the S&P 500 Index as of June 30, 2003. Partial-period average annual compound returns (AACRs) and volatility are included for an additional 134 companies that were removed from the index prior to June 30, 2013 (because of mergers, de-listings, bankruptcies, or other reasons). The grey area highlights stocks with AACRs of -6.7% or below; over a ten-year period, this equates to a cumulative price change of -50%. One constituent is not shown because reported volatility is higher than the maximum value shown on the scale. Median S&P 500 stock represents the point at which median ten-year AACR and median annualized volatility intersect.

Figure 2. Percentage of Russell 3000® Constituents With Three-Year Cumulative Price Performance <-50%

1984–2012



Sources: FactSet Research Systems and Frank Russell Company.

Notes: Company performance is based on three calendar years of cumulative share-price return. For companies that are dropped from the index, partial period performance is calculated using the share price from the company's last trading day. Where performance for a company is interrupted by a merger/acquisition, subsequent performance of the new company is calculated independently. Performance for 132 companies in our dataset has been excluded due to incomplete or inconsistent data. Large-cap companies are defined as the largest 15% of companies in the index by market cap. Small-/mid-cap companies are defined as the remaining 85%.

during rolling three-year periods. The percentages vary widely, depending on the beginning and end-points of the period, and large caps were less likely than small and mid caps to fall precipitously; however, in some periods, the risk of precipitous decline was very high, and even in placid periods the risk of steep falls was much higher than many investors would be comfortable with.

Investors concentrating in one stock run a greater risk of a sharp decline in the value of their portfolios than investors who diversify. A portfolio of 75% diversified equities and 25% municipal bonds has an expected 13% probability of falling 25% or more in a given five-year period; replacing all of that diversified equity allocation with a single stock causes the probability to more than triple (to between 41% and 50%, depending on the volatility of the single stock) (Figure 3). A drawdown of *50% or greater* has a near-zero probability for a 75% equity/25% bond portfolio with no concentrated stock, but a 7% to 14% probability if the equity allocation is concentrated in one stock rather than diversified.

Limited Reasons to Retain the Concentrated Stock

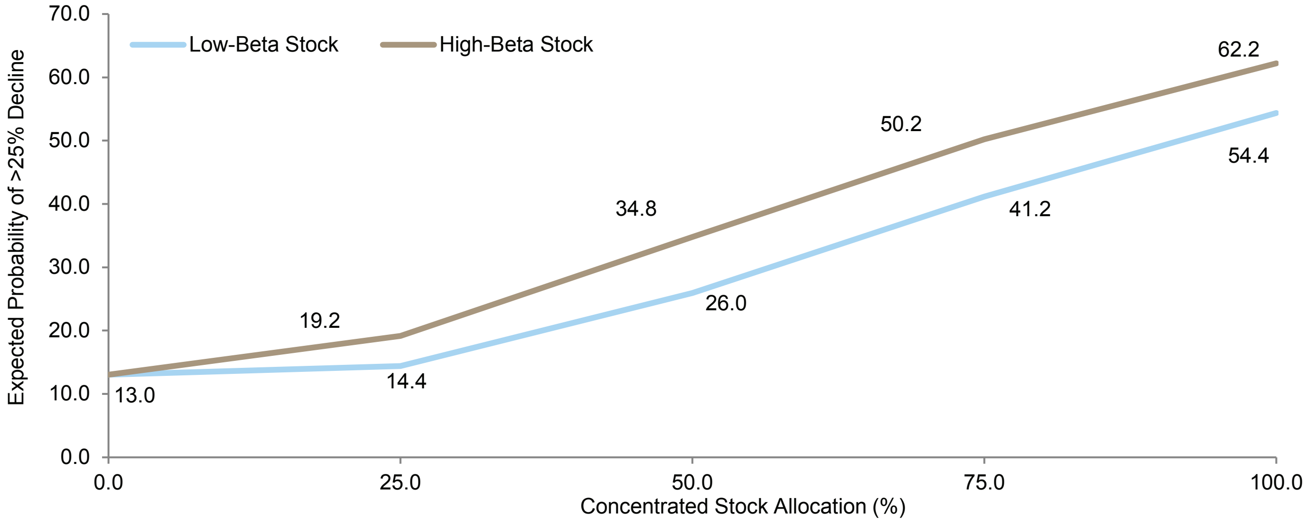
Although we have demonstrated that holding a concentrated stock position carries a great deal of risk, there are some valid reasons to continue to hold a large stock position (these reasons do not diminish the outsized position's risk):

1. The investor is confident that the stock will have a substantially higher return than competing potential investments, particularly because of insider knowledge or control.
2. The investor believes that maintaining her or his level of control over the company (voting rights) is important.
3. Legal or contractual restrictions prevent the shares from being sold (even via a Rule 10b5-1 plan).[2]
4. The investor expects her or his remaining lifespan to be short, such that the stock will be eligible for a stepped-up cost basis in the near term.

If none of these practical reasons to hold a concentrated position is present, then the investor should strongly consider diversifying the portfolio. Capital gains taxes are typically an important consideration. While it is true that investors should prefer to realize taxable capital gains later rather than sooner, all

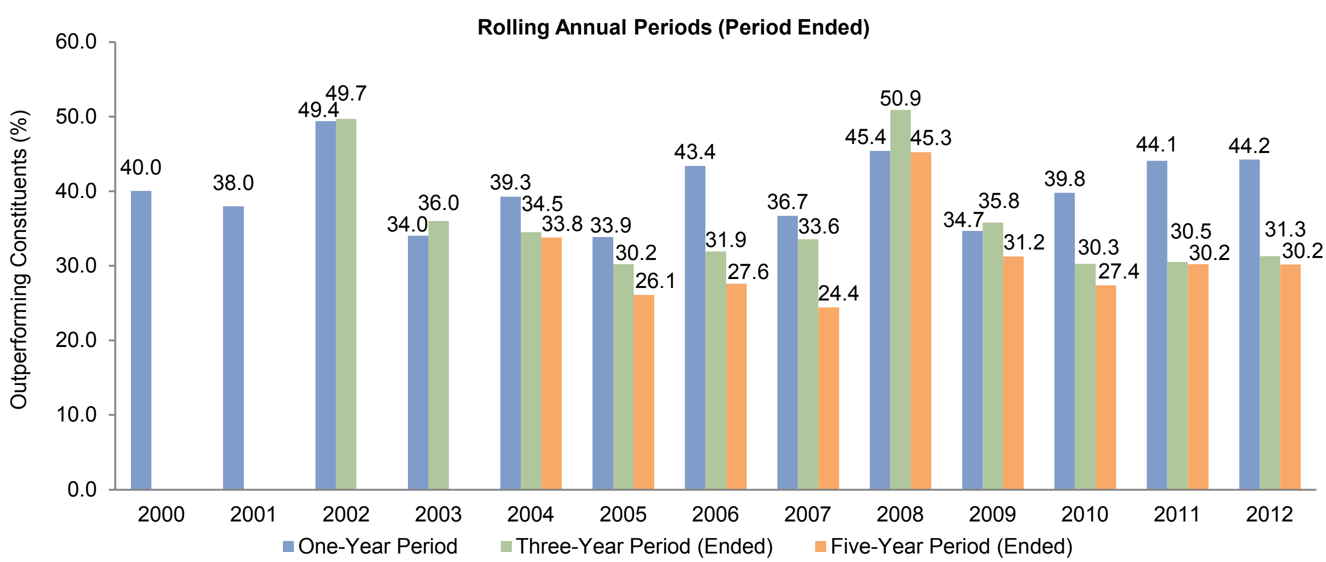
[2] A 10b5-1 plan is a framework allowing company insiders to sell shares gradually over time, even when they regularly come in to possession of material non-public information. The plan, typically a contract between the insider and his or her broker, establishes a trading rule that is to be followed when trading the insider's shares. The plan must be adopted during a time when the insider does not have material, non-public information. Investors should consult legal counsel when establishing such a plan.

Figure 3. Impact of Concentrated Stock on the Risk of a > 25% Portfolio Drawdown
Expected probability of the portfolio declining in value by at least 25% at any point during a given five-year period



Source: Cambridge Associates LLC.
Notes: Both the high- and low-beta stocks are assumed to have a correlation of roughly 50% to the broad U.S. equity market, and their assumed share-price volatilities are 35.0% and 28.5% annualized standard deviation, respectively. Initial allocation is 75% diversified global equity, 25% municipal bonds. The diversified equity portion of the portfolio is then replaced by a concentrated stock position in increments of 25%; at the final point, concentrated stock represents 100% of the portfolio.

Figure 4. Percentage of Russell 1000® Index Constituents to Outperform the Equal-Weighted Index
2000–12



Sources: FactSet Research Systems and Frank Russell Company.
Notes: Constituents for each period are restricted to those in the index at the beginning of each period. Performance of companies that exit the index prior to the end of the period are included in both the numerator and denominator of the ratio.

things equal, all things are clearly not equal here. Accelerating the tax payment allows the investor to eliminate the single-stock risk at a relatively modest cost. If the single stock and an alternative diversified equity portfolio compound steadily at the same rate of 8% (this is a generous assumption, actually—because of the corrosive impact of their higher volatility, the majority of single stocks tend to compound at a *lower* rate than a diversified basket, as shown in Figure 4), the difference in final after-tax wealth between realizing the capital gain today versus ten years from now is approximately 15%, or 1.4% annualized. One way to reframe the decision is to imagine that you start out with a diversified portfolio, and that an advisor recommends that you liquidate it and invest everything in one stock, which, if all goes well, will deliver an after-tax annualized return that is about 1% higher than that of the diversified portfolio. Few would find that proposition appealing.

Sell, Hedge, or Hold?

Managing single-stock risk is an important wealth-preservation measure, and in most circumstances selling down the concentrated position (or granting it to charity) is the cleanest, lowest-risk strategy.

If the shares cannot be sold, or if the investor is not willing to accept the accelerated payment of capital gains tax on the position, other strategies can help to moderate the risk.

In the following pages we describe several of these strategies, together with our assessment of each strategy's overall suitability in managing the portfolio's exposure to the single stock's risk (please see Figure 5 for a summary of our views on the primary selling/granting, hedging, and holding strategies).[3]

Permanently Eliminating Exposure to the Single Stock

The surest way to eliminate or reduce concentrated stock exposure is very simple: begin selling the stock if the proceeds are to be reinvested, or begin granting it if the proceeds are intended for charity. Sales trigger the capital gains tax, but most hedges merely postpone it (at the cost of an ongoing return drag from the hedges). Many investors will investigate available solutions and conclude that disposal is often the ideal solution.

Sell stock all at once or average out over time? For families who intend to reinvest the proceeds from their concentrated positions in a diversified portfolio, one question is whether to do so over time or immediately.

[3] Cambridge Associates LLC, its subsidiaries, affiliates, or employees do not provide legal or tax advice. Please consult with your attorney, accountant, and/or tax advisor for advice concerning your particular circumstances.

Figure 5. Concentrated Stock Position Strategies

INVESTOR'S GOAL	BROADLY USEFUL STRATEGIES	POSSIBLY BENEFICIAL STRATEGIES	PROBLEMATIC STRATEGIES
Permanently Eliminate Exposure	**Sell the shares** Downside is capital gains tax; upside is reduced risk (from the stock position, tax treatment of hedge, or counterparty risk). Consider 10b5-1 plan **Grant shares to charity** If eventual intent is charity, accelerate: direct grants, private foundation, donor-advised fund, or CRT	**Liquidation program through covered calls** For investors who want to structure a sales program over time, selling calls generates income	
Hedge Exposure (temporarily or permanently)		**Cashless collar** Relatively clean. Reduces return potential. Some ambiguity about taxes. Using OTC derivatives increases risk **Collar and portfolio loan** Appealing when shares can't be sold. Some tax ambiguity. Margin loans are floating rate	**Prepaid variable forward** Similar economics to cashless collar, but with counterparty risk, opaque fees, and tax uncertainty **Exchange funds** High fees, illiquidity, and adverse selection—what's not to like? **Protective-put purchases** Clean hedge, but quite costly over time. Boosts dividend tax. In short, only feasible for short period
Retain Single-Stock Exposure		**Build multi-asset portfolio around exposure** When single-stock exposure is moderate, thoughtful diversification around the position is possible	**Equity completion fund** High fees; not practical unless single-stock exposure is small **Hold unprotected exposure and borrow to diversify** Riskier even than holding only the concentrated stock!

Two arguments in favor of averaging out are: (1) it allows the investor to capture any incremental upside in the concentrated stock; and (2) if carried out in a way that incorporates valuations, it could lead to superior long-term performance compared with an outright sale. Two counterarguments are: (1) the additional time spent holding the concentrated stock represents continued exposure to the single-stock risk; and (2) the ability to take profits and "rebalance" into the market assumes the single stock will outperform some of the time.

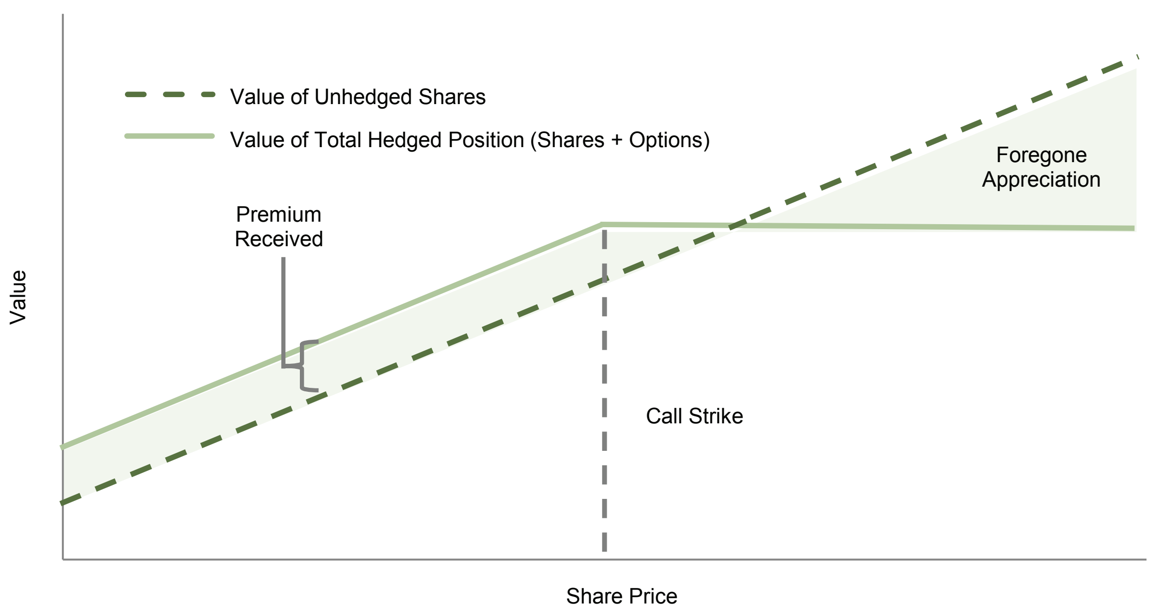
One of the biggest risks associated with the gradual approach is that the averaging-out plan is not followed (perhaps owing to one or more behavioral risks such as regret avoidance or reference investing). For this reason, we favor selling outright rather than over time. For those who choose to sell over time, we would suggest covered calls.

Covered calls. The covered call strategy does not hedge the exposure to the concentrated stock, but rather can be seen as a disciplined and opportunistic way to hew to a gradual liquidation strategy, generating income via option premiums in the meantime, and automatically liquidating shares if they rise sharply in price. In this strategy, the investor *sells* call options that grant the call buyer the right (not the obligation) to purchase shares of the concentrated stock at a specific price (the strike price). If the stock price moves above the strike price (in other words, if the call becomes "in the money"), the investor is *obliged* to sell the stock at the strike price if the call owner decides to exercise the option. Figure 6 illustrates the economics of the covered-call strategy.

Call-option premium income varies: highly volatile shares, or those perceived by the market to have a strong upside potential, will generate higher call-option prices. Investors can sell short-dated options close to the current share price, or longer-dated options farther out of the money. The relative attractiveness of those two postures varies over time and from one stock to the next. The implied volatility of the options contract is a reasonable guide to value (the higher the implied volatility, the richer the option contract's value—and rich valuations that incorporate a lot of potential volatility into the contract price are a good thing as a seller).

For investors who have chosen to liquidate shares and to do so over an extended period, we like the covered-call strategy for several reasons. First, selling call options has the effect of enforcing discipline on an averaging-out

Figure 6. Payoff of Covered Call



strategy: if the stock moves well above the strike price, it likely *will be* sold, allowing the investor to diversify the portfolio with the proceeds.[4] This avoids the pitfalls of reference dependency, discussed earlier (specifically, the tendency for the investor to say, "Yes I had intended to sell my shares of Stock X, but that was before I realized that it would win a new contract/get upgraded by that bank analyst/receive FDA approval for its pioneering new drug/double its same-store sales. Now its prospects are better than ever—I would be foolish to sell today!"). Second, an analysis of covered call writing suggests that the trade-off between receiving an options premium and giving up some upside may be advantageous on average. The level of stock volatility implied by options prices tends to be elevated relative to the subsequent realized volatility of equity markets.[5] Third, for investors who are willing to give up some flexibility, covered calls are a way to generate income on shares targeted for sale.[6]

We suggest two potential applications for the covered-call strategy:

- Investors who choose to divest shares over an extended period should consider writing call options on the shares targeted for eventual sale to generate extra income and to be opportunistic about the divestment strategy.[7] For example, if the investor commits to selling 200,000 shares today and plans to sell 350,000 additional shares at year-end, he or she may benefit from writing call options today on the 350,000 shares targeted for sale at year-end. The appropriate strike price of the options varies. The more elevated the strike price of the call option, relative to the current share price, the smaller the call premium (because the buyer is less likely to be able to exercise the option before it expires).
- Covered calls can be useful for investors who have chosen to hold on to their concentrated position because they believe the shares are undervalued.[8] As an example, perhaps the shares typically offer a 5% dividend and trade at book value ($100 currently), yet today they offer a 6% dividend and trade at a 17% discount to book value. The investor should then consider writing call options on the shares, struck at what he or she considers to be the fair value for the shares (perhaps $100).

Because of their much greater pre-expiry liquidity, we believe investors would often do well to sell listed call options rather than doing so "over the counter" (selling a customized

[4] The exercise of listed, American-style options actually requires the options seller to deliver his/her shares, rather than simply paying in cash the difference between the share price and the strike price. We prefer this mechanism because it mandates that the investor divest the concentrated exposure if the share price rises above the target level.

[5] For more information on option-writing strategies, please see our 2011 report *The Benefits of Selling Volatility*.

[6] The lost flexibility is that option sellers are at the whim of the market and the option buyer. If the stock's price rises above the call price, the option can be exercised.

[7] At the risk of stating the obvious, investors should not write call options on shares that they are not able to sell immediately. Once the option is written, the investor could be required to deliver shares at any time if the share price moves above the strike price (for American-style options).

[8] This decision is highly susceptible to the reference-dependency and anchoring problems discussed earlier. Carefully assess whether the reluctance is due to objectively determined undervaluation, or rather to anchoring at a particular value (for example, the share's historical peak value, or the share price that would give the investor sufficient wealth to accomplish a particular charitable or lifestyle goal).

call option to a dealer). Roughly 3,000 individual stocks, the majority of the U.S. equity market, had some listed option volume in 2012[9]; however, for many the options market is rather thin (even some well-known companies have little options activity—for example, only about 1,000 call options contracts traded on an average day for Texas Instruments last year, controlling about $3 million of shares). Although the listed market is preferable, the OTC market could still be a viable alternative if listed-market liquidity is not available. While options *buyers* must keep counterparty risk at the forefront when considering OTC contracts, the main drawbacks to *writing* OTC options[10] are opaque pricing and limited liquidity prior to expiration.[11] Investors can moderate some of these problems: improve pricing by requesting bids on identically structured call options from multiple dealers (telling the dealers up front that they are participating in an auction process to encourage aggressive pricing), and lessen the impact of illiquidity by laddering the call options so that they expire successively over several months or quarters. Investors who are not in a control position at the company may generate additional income by lending out their shares.[12]

[9] Please see CBOE Market Statistics, 2012.

[10] When an investor writes an option, there is no contingent liability from the dealer, thus the bankruptcy of a dealer that bought the investor's call option would likely be an operational hassle but would not generally present much financial risk to the investor.

[11] Dealers will argue that they will make a market in the options, and this is technically true; however, it is a market with one buyer rather than a competitive market.

[12] For more information on securities lending, please see our 2013 research report *Securities Lending: What a Difference Five Years Makes*. Investors who are hedging their concentrated shares should consult tax counsel prior to lending those shares, because of the potential for adverse tax consequences if the shares are lent to a hedge provider.

Investors should also consult with a tax expert who is familiar with the Straddle Rule and requirements for treating a position as a Qualified Covered Call for tax purposes (preventing the premature triggering of capital gains).

Use concentrated stock to fund charitable goals and reduce taxes. For families with philanthropic intentions and concentrated stock holdings, several different approaches are available that use the concentrated stock to fund current or future charitable goals, generate an immediate tax deduction, and avoid the capital gains tax liability associated with the stock, even if the family has not yet identified the charitable beneficiaries. *It is critical that the family donate the stock to the appropriate charitable vehicle or to individual charities, rather than sell the shares for cash and donate the cash.*

Donate shares directly to charitable recipients. If philanthropy is the goal *and* the investor has already identified a worthy cause to support, a simple gift of the appreciated shares may be in order, eliminating capital gains tax, maximizing the upfront tax deduction,[13] and perhaps maximizing the charitable impact. At that point, the charity will hold a large block of stock (and in many cases will move to sell the shares as soon as feasible).

Donate shares to a private foundation. If philanthropy is the goal but the *charitable beneficiaries are not yet identified* (or the family would prefer to make the grants over time), private non-operating foundations are a popular choice. The family establishes a non-profit foundation, and then transfers the appreciated shares into the foundation. This avoids triggering capital gains tax and provides an immediate deduction for the contributed assets.

[13] The deduction is typically equal to the fair market value of the shares donated, at the time of the grant.

Private foundations typically allow donors to retain significant control over the investment portfolio, rather than choosing from a pre-selected menu of funds, as well as over grant-making activity.

However, establishing a foundation has considerable upfront and continuing administrative costs that eat into potential philanthropic gifts—including an excise tax of up to 2% on net investment returns, IRS filing and disclosure requirements that limit privacy, and an onerous 5% minimum spending requirement that could erode the real value of the assets over time. Investors donating to private foundations face more restrictive limits on the upfront tax deduction for contributions than the limits for donor-advised funds or public charities.[14]

Donate shares to a donor-advised fund or community foundation. Donor-advised funds (DAFs) and community foundations address several of the key considerations associated with private foundations. With DAFs and community foundations (which have similar tax benefits and incorporate similar control limitations as DAFs but offer expertise in supporting the needs of local communities), the investor can in some cases receive expanded upfront tax deductions from charitable gifts (compared to private foundations). Also, annual management fees are known in advance and are often less than private foundation expenses, and donors may still guide annual philanthropic giving. Finally, in contrast with private foundations, DAFs and community foundations can help maintain donors' privacy and are not subject to IRS excise taxes on net investment returns or minimum 5% distribution requirements. Investors should be aware of potential drawbacks to DAFs including potentially limited control over investments.

Charitable remainder trusts. If the investor wishes to continue receiving income from this portion of his or her assets and intends to eventually make significant charitable gifts, a Charitable Remainder Trust (CRT) can be a viable option. A CRT is a legal entity established between a donor and a trustee, where the donor irrevocably contributes assets to a recognized charity; in exchange, one or more non-charitable beneficiaries (usually the donor) receive annual income payments for their lifetime or for a fixed term (up to 20 years).[15] Upon the death of the donor or completion of the term, the assets are transferred to the charity.[16] The CRT is tax exempt, so the charity may diversify the concentrated stock position without adverse tax effects once the shares have been transferred. In addition, the donor receives an immediate charitable deduction for the present value of the charitable remainder interest. Investors who do not have both income needs and philanthropic motivation are unlikely to find CRTs attractive. Investors who are seeking lifetime income but have no particular charitable inclinations will be unlikely to find the terms and economics of a CRT appealing relative to low-fee commercial annuities. Investors who do not require the income will likely find a DAF to be superior.

Hedging Exposure to the Single Stock

Investors who wish to hold the concentrated stock position (generally to postpone the realization of capital gains), but who recognize the importance of limiting the risk of the position,

[14] Please see Scott Welch, "Comparing Financial and Charitable Techniques for Disposing of Low Basis Stock," *The Journal of Wealth Management*, Spring 2002, pp. 37–46.

[15] Properly managed, the distribution income from the CRT may be subject to the capital gains rate rather than taxable at ordinary income rates.

[16] The grantor may later change the charitable beneficiary.

Whither shorting against the box?

Prior to 1997, a popular hedging strategy for concentrated stock positions was to "short against the box" (SATB). In this colorfully named strategy, investors enter into a short sale of the concentrated stock, resulting in a perfectly hedged position (zero upside or downside exposure). The investor could then borrow close to the full value of the concentrated stock invested in a diversified portfolio, but since the underlying stock was still "owned," no capital gains were realized. The Taxpayer Relief Act of 1997 changed this, establishing "constructive sale rules" (Section 1259 of the U.S. Tax Code) that require certain SATB transactions to be recognized as a sale, thus incurring capital gains tax.

For investors who wish to retain exposure to at least 50% of their concentrated stock position, the language of the Internal Revenue Code may permit a very careful implementation of SATB, separating the investor's shares into two equal buckets and only short selling the value of one bucket at a time. Annually, the investor would close the short in one bucket and simultaneously open it in the other bucket. The investor could borrow up to 99% of the value of the hedged bucket, at a margin loan rate only moderately above the cash interest rate earned on the hedged position.

Since 1997, several strategies have emerged that have similar economics to SATB, including prepaid variable forwards, collars combined with loans ("monetized collars"), and non-recourse loans with qualified covered calls. The key is that each of these retains a certain amount of exposure to the stock's upside and downside, so that the strategies may not be "substantially identical" to a short sale, offsetting notional principal contract, or full futures or forward contract. However, we should note that significant regulatory risk remains—several high-profile court cases and IRS memoranda have narrowed the potential benefits of these strategies, and investors must be aware of the potential for retroactive tax penalties, as well as the potentially increased likelihood of audits. In short, while some of these strategies are worth considering, they might be too clever by half—or at least by 20%, the maximum long-term capital gains tax rate!

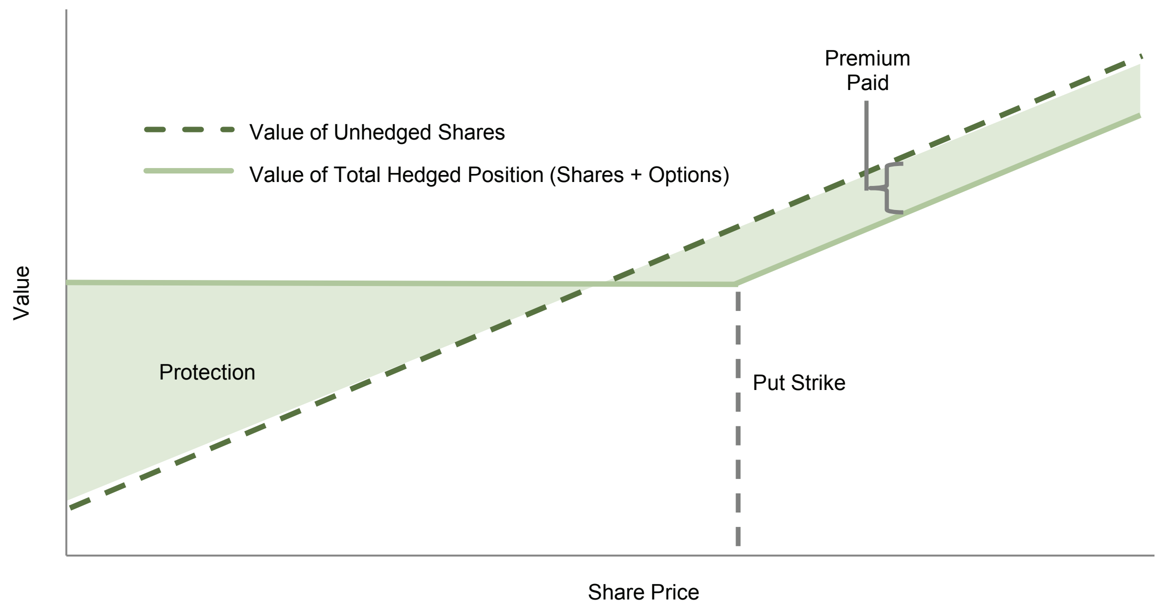
can consider several hedging alternatives, including collars and protective puts. They should realize that the hedges have economic costs (including fees, transaction costs, and in some cases limited upside from the retained stock), so the growth potential of the hedged position is constrained. Because carrying a hedged position indefinitely has limited appeal, investors should consider their exit strategy before initiating the hedge.

Consulting expert tax counsel is a critical step, and investors should consider using an independent expert (Cambridge Associates LLC derivatives specialists are one example of this role) to evaluate proposed derivatives structures and terms, particularly for over-the-counter derivatives.

We would note that much of the hedging activity is initiated by investment banks, which offer hedging services to company founders or other insiders in conjunction with mergers or others transactions they are underwriting. Investors requiring these services should not rely solely on underwriters for these services and for hedging advice; rather, they should consult outside experts and employ competitive bidding, and they should also consider simple alternatives to the expense of hedging shares for indefinite time periods. The quality and cost of hedging transactions varies widely, and investors who only deal with one provider may pay dearly for the convenience.

Opinions on the tax treatment of various hedging strategies vary from one practitioner to the next, and investors employing these strategies are typically not doing so with the implicit blessing of tax authorities or legislators. Hedging strategies that become popular may be constrained by future rulings (see sidebar on shorting against the box) or may even face retroactive penalties. Investors should employ competent tax counsel and realize

Figure 7. Payoff of Protective Put



that they may be opening themselves up to some elevated audit risk and potentially to the expense of tax court litigation and to associated public scrutiny.

Protective puts. This strategy, similar to the purchase of an insurance policy, is intended purely to mitigate downside risks, and does so at a significant ongoing cash cost (rather than by giving up upside, as some other strategies do). The investor purchases put options, granting the right (but not the obligation) to sell the stock at a specific "strike" price—generally at or below the current stock price, for a particular time period. Please see Figure 7 for an illustration of the economics of a stock protected by a put option.

With a protective put strategy, the investor retains all of the upside and participates in the dividend, but at the cost of an upfront put-option premium.

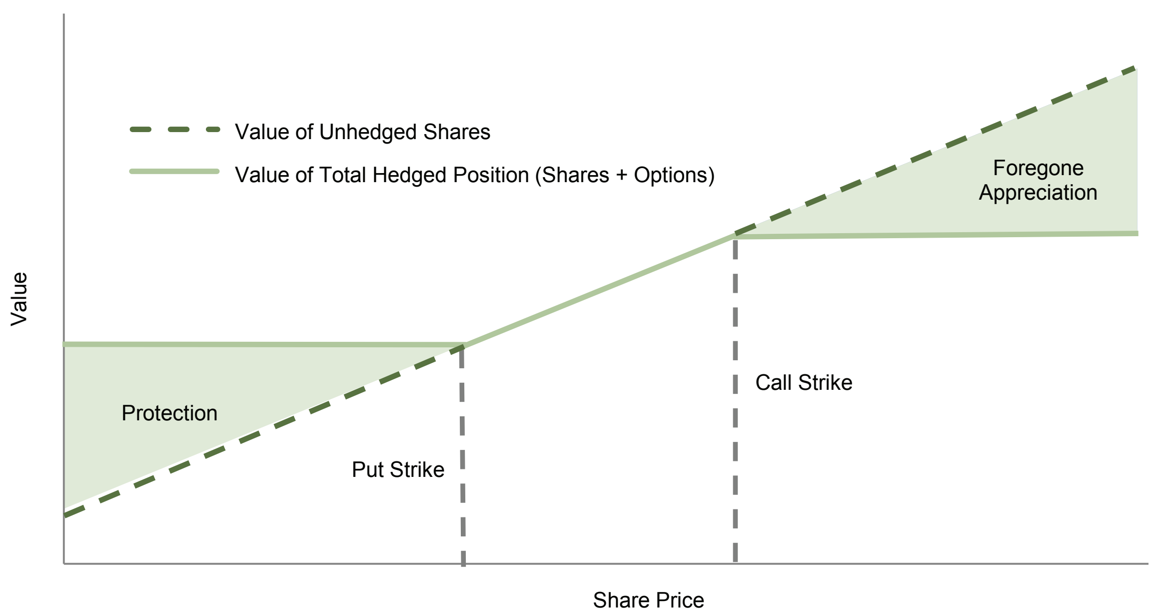
This strategy has limited appeal. First, it is expensive—here, the premium of implied volatility over realized volatility works against the investor, such that put options appear to be persistently overpriced. Over time, the premium eats into returns. As an example, as of July 1, 2013 (not a particularly volatile period), put options on the world's largest-capitalization stock, ExxonMobil, were priced such that protecting against a decline of more than 15% through January 2015 cost 4.0% annualized. Similar put options on more volatile stocks were much more expensive (Green Mountain Coffee Roasters 85% puts, for example, cost 12% annualized, and those for coal producer Peabody Energy cost 13%). Imagine if homeowner's insurance on a $1 million home cost $130,000 per year (and carried a $150,000 deductible!). The cost to hedge the S&P 500 Index against a 15% decline through January 2015 was 3.5%, so the incremental cost to hedge ExxonMobil compared to the S&P 500 is 0.5%, versus roughly 8.5% and 9.5%, respectively, for the more volatile examples.

Puts also have a potential adverse tax effect: in the United States, investors are generally required to hold stock unhedged for more than half of each 121-day dividend period for dividends to be taxable at the lower dividend tax rate (as opposed to the higher ordinary income tax rate). Finally, because a put is a right—but not an obligation—the strategy does not effectively enforce discipline in "averaging out" (for example, an investor could decide against exercising the put options, or simply "cash settle" for a profit and hold on to the concentrated stock).

Collars. A collar is simply a combination of options contracts—purchasing a put option to limit downside risk (as described in the previous section), while selling a call to earn offsetting income by capping upside capture. Thus, a collar effectively locks in a price range for the hedged position between the put and call option strike prices. Figure 8 illustrates a "cashless" collar position, in which the premium earned from the call option funds the entire purchase of the put option—although it is possible to create collars that have a net cost or that generate net income, by adjusting the strike prices of the put and the call. In many cases, the cost of the put is greater than the income from the call at a given distance from the current share price (this property is known to options watchers as "skew"). For this reason, positions hedged with a cashless collar often have diminished upside opportunity relative to the amount of retained downside risk. Continuing with the ExxonMobil example, financing the 85% January 2015 put option with a January 2015 call option would require that the investor agree to give up any upside beyond 5%. If the share price moves more than 5% price at initiation, the investor's shares will be called away for the agreed price (105% of the price at initiation). Thus the maximum expected return of the hedged position over the period is essentially 5% plus the dividend stream.

This strategy offers some downside protection, at the cost of upside participation (although dividends may be taxed at a higher rate, as the stock

Figure 8. Payoff of Cashless Collar



is hedged). The strategy can also be combined with a loan for a combined hedge + monetization strategy, as discussed in the next section.

A few caveats are in order for this strategy. First, the collar constrains the expected return of the hedged position (setting aside transaction costs for the options, which impact it further), so investors using it to "buy time" should be confident that the time they are purchasing is worth the cost. Unless the investor expects to bequeath the shares to heirs in the near term (at a stepped-up cost basis), and absent any regulatory or contractual limitations that prevent selling but allow hedging, investors should consider whether holding the hedge is truly preferable to simply diversifying today. Second, customized time periods or strike prices, or a desire to implement a collar strategy larger than the listed options market can easily accommodate, would necessitate using over-the-counter (OTC) derivatives, with their counterparty risk, very limited pre-expiry liquidity, and opaque pricing. Third, there is the potential that a collared position could be deemed a "constructive sale," triggering the capital gains tax. While there is no specific legal definition for collar constructions that are acceptable versus those that can be deemed a constructive sale, some experts believe that a 15- to 20-percentage point minimum window between put and call strike prices (for example, an 85% put and a 5% call) preserves sufficient exposure to sidestep a constructive sale. A separate tax provision known as the Straddle Rule negatively impacts the tax treatment of shares acquired after 1983. The tax complications of a collar are many (and include shades of gray); competent tax counsel is essential.

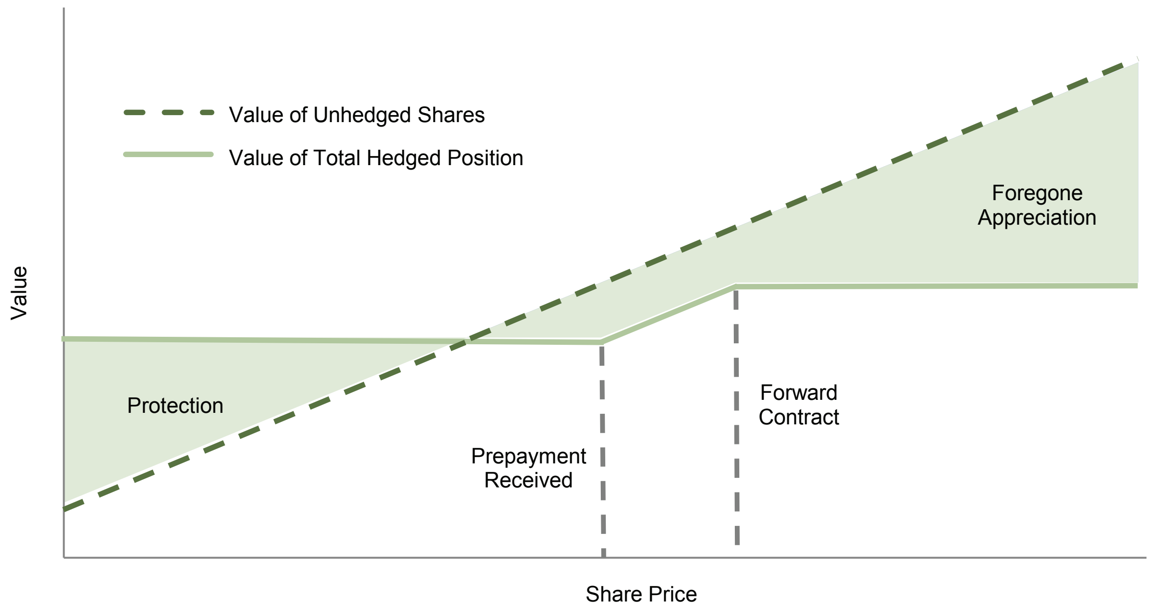
Collars combined with loans ("monetized collar"). This strategy simply combines a collar (the investor purchases a protective put and sells a call) with a margin loan to extract value from the hedged position. As discussed previously, the collar essentially locks in a price range for the concentrated stock, bounded by the put and call strike prices. The strategy adds on "monetization" (a loan), so that the investor may move toward a diversified portfolio before selling the concentrated stock. Due to recently implemented Portfolio Margin rules, investors can borrow much of the entire put strike price. Portfolio Margining, formally adopted in 2007, allows for a risk-based determination of margin requirements—since the position is hedged, the requirements are low. Previously, applicable Regulation T margin requirements would otherwise only permit 50% in a loan for investments in other securities.

The monetized collar strategy has several advantages over prepaid variable forwards (PVFs) (described in the next section). Investors can achieve an identical economic result to PVFs, using listed options rather than a single OTC counterparty, and with greater price transparency on the component parts and pre-expiry liquidity in the event the investor chooses to unwind the position. The strategy may also be superior to PVFs from a current tax standpoint; while dividends are still taxed at the ordinary income rate, interest expenses on the margin loan may be at least partially deductible.

However, caveats apply here as well. First, much depends on the specific options contracts (liquid, exchange-traded options may not be available for every stock), as well as the availability of cheap financing and ability to roll over the loan and options contracts into future periods. Also, while the regulatory and audit risk appear to be lower than those of a PVF, this situation could change.[17]

[17] Much of the information that we present on PVFs, monetized collars, and the tax treatment of various

Figure 9. Payoff of Prepaid Variable Forward



Prepaid variable forward. A long-time favorite strategy on Wall Street, a PVF is essentially a combination of a collar (purchased put and sold call) with a loan, all packaged into a single contract. The contract is structured as a forward sale of a variable number of shares, but the economics are the same as a monetized collar (please see Figure 9 for illustrative economics).

As with collars, investors have been careful to build "floors" and "caps" into PVF structures that are designed to avoid triggering constructive-sale rules (i.e., a minimum band of 15% to 20%), and up until recently, the IRS offered little apparent resistance. However, a high-profile recent court decision turned the tide,[18] with the U.S. Tax Court ruling that the combination of a PVF and securities lending to the same counterparty—a common practice that enables the counterparty to hedge risks—*does* trigger constructive sale rules (the Tenth Circuit upheld the tax court's ruling in a late-2011 decision). In addition, a consistent trend of increased IRS scrutiny of PVFs suggests that investors should be wary of tax challenges as well as the likelihood of an audit.

Even without the stepped-up scrutiny and tax challenges, we would be skeptical of PVFs. Combining these multiple contracts makes it increasingly difficult for an investor to ensure competitive pricing on each "leg" of the transaction. In addition, while PVFs *might* avoid constructive sale provisions, they are otherwise highly tax inefficient with respect to dividends

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hedged positions is drawn from published research and presentations by two long-time industry experts: Thomas Boczar of Intelligent Edge Advisors (including Boczar's presentations at the CFA Institute's Concentrated Stock Management conference in September 2009) and Robert Gordon of Twenty-First Securities (including "The 21st Century Solutions to Hedging Low-Basis Stock," *Journal of Wealth Management*, Spring 2009, pp. 75–78).

[18] Please see media coverage of Anschutz Co. v. Commissioner.

(taxed at the ordinary rate), interest expenses (not deductible), and losses (treated as long term).[19]

Exchange funds (also called swap funds). An exchange fund is a partnership between a group of investors, each of whom contributes a concentrated-stock holding to a pooled fund, thus diluting the concentration risk. The fund may be composed of up to 80% in exchange-traded equities, with a minimum of 20% in illiquid investments. The fund is "locked up" for a minimum of seven years, at which point each investor may receive a *pro rata* share of the basket of investments, retaining the cost basis of his or her original investment. As a result, investors can achieve some diversification without realizing capital gains.

We believe that exchange funds contain far more risks than benefits. In terms of diversification, the basket of stocks is entirely dependent on the initial group of contributors. Rather than an actively managed or passively managed portfolio, this is in effect an accidentally constructed portfolio. It also may suffer from adverse selection bias (the investors contributing securities likely do not expect them to outperform a diversified portfolio). Also, the fund contains illiquid investments that may not be desired as a substitute for the concentrated holding, and is *itself* illiquid for seven years. Exchange funds can also be expensive, with placement fees as well as annual management fees, and sometimes redemption fees as well.[20]

[19] Please see Thomas Boczar, "Mitigating the Legal Duties of Fiduciaries and Financial Advisors to Manage Concentrated Stock Risk: Conceptualizing and Implementing a 'Best Practices' Framework," *The Journal of Wealth Management*, Summer 2007, pp. 16–34.

[20] For more on exchange funds, please see Stephen Horan, ed., *Private Wealth: Wealth Management in Practice*, CFA Institute monograph, 2009.

Retaining Some Exposure to Single-Stock Risk

Investors who choose to hold on to significant single-stock exposure have some choices to make. First, should they explicitly build the rest of the portfolio around the single stock's risk factors? Second, should they borrow against the unhedged position to increase diversification (the short answer is "no!")? And third, should they employ covered calls to generate income from the position and instill discipline on selling down the exposure if it continues to appreciate?

Completion funds. A completion fund is a portfolio that mimics a diversified portfolio by "working around" a concentrated position. For example, if an investor's asset allocation includes exposure to U.S. equities, benchmarked to the S&P 500 Index, and has significant exposure to the shares of a U.S. retailer, a completion fund manager will attempt to build complementary positions around the existing position, so that the portfolio has characteristics similar to that of the broad market index (capitalization, price-earnings ratio, price-to–book value ratio, sector exposure, etc.). A completion fund can also be managed in a way that "averages out" of the concentrated stock in a tax-efficient manner over time, realizing gains on the concentrated stock over time once the manager is able to harvest losses on other stocks in the portfolio.

Completion funds have limited applicability. First, this strategy is only feasible if the concentrated stock holding represents a moderate fraction of the investor's equity holdings (a portfolio that is 80% Jane's Hardware shares and 20% other single stocks is never going to look like the S&P 500, regardless of the talents of the completion-fund manager).[21] Second,

[21] And for exposures that are much smaller and more suited to a completion fund (for example, 10% of the

a large, passively managed core position built around a concentrated stock might not be the optimal strategy or manager structure within the asset class.

Finally, we make the distinction between a single-asset completion fund and a multi-asset completion portfolio. While traditional equity-only completion funds have very limited utility for most investors with significant concentrated exposure, working around a concentrated stock from the whole-portfolio perspective, including all asset classes, is important for investors who choose to retain the concentrated exposure.[22] We will provide two examples of this concept. First, an investor with 25% of the portfolio in the shares of a large oil & gas exploration and production company should consider eschewing or deemphasizing not just natural resources equities, but perhaps also private energy partnerships and commodity futures. Second, an investor with 30% of the portfolio in an office REIT has little use for other REITs or private real estate funds, and should consider shrinking the exposure to high-yield bonds, infrastructure, master limited partnerships, utility shares, and other assets that tend to align with the combination of interest rates and the business cycle.

Borrowing against unhedged stock. Some investment banks will encourage investors to pledge the concentrated position as collateral and borrow against it to "diversify the portfolio." This is true in a very limited and literal sense, in that the portfolio is then exposed to a wider variety of risks than the concentrated stock. However, this is accomplished with *addition*, rather than *substitution,* via leverage. If the concentrated position is not risky enough, let us lever it up and then *add* risk from municipal bonds, other stocks, and perhaps hedge funds for added diversification![23] Many well-known chief executives have graced the pages of financial newspapers when they faced margin calls and significant financial distress after the share prices of their employers plummeted. One CEO famously sold his collection of historic maps to his company and saw more than 90% of his shares liquidated to meet margin calls during 2008. Good thing he was "diversified" at the time … . Suffice it to say that investors should run, not walk, from an advisor or banker offering a full recourse or margin loan secured by unhedged, concentrated equity.

Concluding Thoughts

Concentrated exposure to a single stock is a common feature in the landscape of American wealth, and while concentration can create wealth, it can also destroy it. Families with concentrated stocks face an elevated risk of severe drawdowns, yet many may hesitate to lessen the risk because of behavioral and other limitations. Families who elect to lessen their exposure can do so permanently via immediate share sales, immediate grants to charitable pools, or disciplined sales program incorporating call-writing, or temporarily via derivatives-based approaches such as zero-premium collars. ■

listed equity portfolio and 5% of the investor's total portfolio), the concentrated position's risk does not pose much of a threat to the portfolio.

[22] Please see Jean Brunel, *Integrated Wealth Management: The New Direction for Portfolio Managers*, Euromoney Books, 2002.

[23] Regulation T margin requirements generally allow up to 50% of the value of a single stock to be borrowed for a "purpose loan" (i.e., for investments in securities). The base-case expected return from this strategy is likely to look attractive when presented by a banker (because the newly acquired exposures simply have to out-return the after-tax cost of the margin loan), but a margin call is all it takes to permanently impair capital, by forcing the fire sale of shares at depressed levels.