INVESTING IN PRIVATE GROWTH COMPANIES | 2014

HISTORICAL RETURN ANALYSIS AND ASSET ALLOCATION STRATEGIES

BY TONY D. YEH AND NING GUAN

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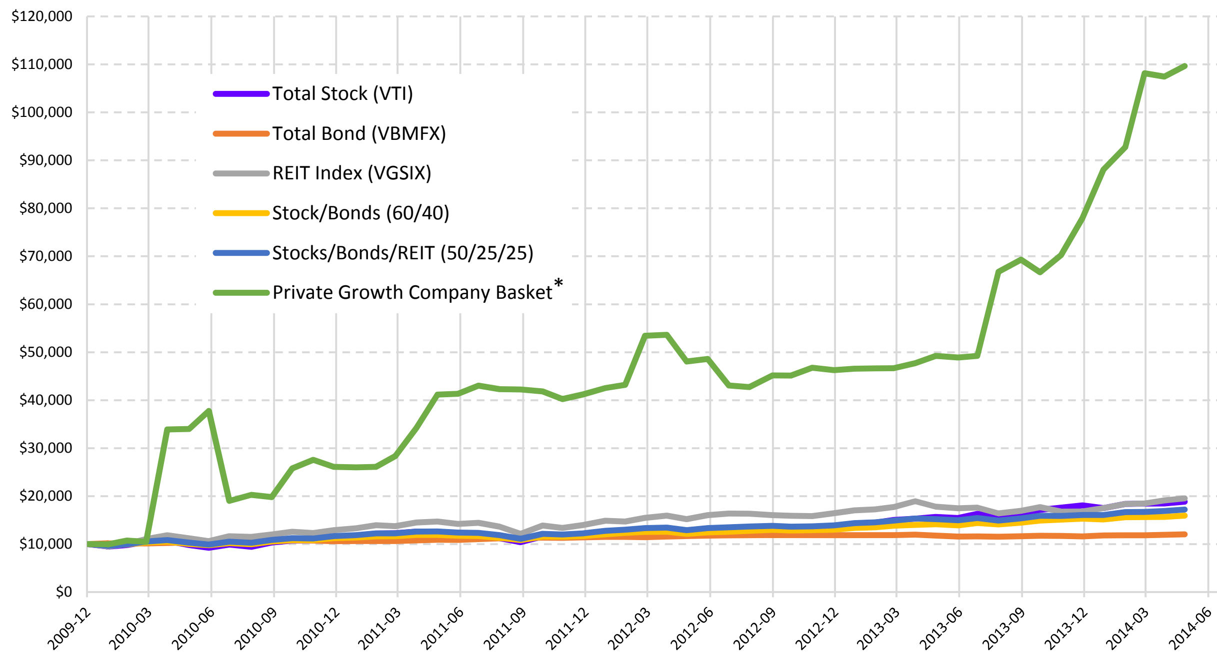
ABSTRACT

Until recently, the opportunity to invest in Venture Capital backed private growth companies (PGC) was only accessible to institutional investors and high net worth individuals with connections to the Venture Capital industry. However, ongoing changes in legislation (such as the JOBS Act), the emergence of alternative trading platforms, and new fund structures have finally brought this alternative asset within the reach of all investors.

Investors in alternative assets typically seek two key characteristics: the potential for outsized returns and a low correlation to traditional asset classes such as public equity and fixed income. An analysis of private growth company returns over the last 4 1/2 years reveals that this alternative asset class successfully meets both of these criteria.

Further analysis reveals that private growth company shares can provide significant return enhancement and diversification effects to commonly held benchmark portfolios, such as a 60% equity/40% bond portfolio or a 50% equity/25% bond/25% REIT portfolio. As can be seen in the chart below, the PGC asset class can deliver outsized returns. The issue is in managing its associated volatility as part of a diversified portfolio.

GROWTH IN $10,000 INVESTED: JANUARY 1, 2010 TO JUNE 30, 2014



Past performance displayed in the exhibit is no guarantee of future results.

Source: Pacifica Strategic Advisors LLC, Vanguard Group, Inc. and SharesPost Financial Corporation

THE INVESTMENT HISTORY OF PRIVATE COMPANY SHARES IN THE SECONDARY MARKET

Secondary market transactions in privately held companies have become more prevalent in recent history. The emergence of platforms that facilitate investment in private company securities – such as the SharesPost – have created a marketplace from which one would have the ability to track the secondary market performance of certain private company securities. The data used in this research brief encompasses 4 ½ years of transaction history of private company securities on the SharesPost platform.

* A description of the construction of the private growth company basket is outlined in Appendix A. The analytical period for all investments covered in this research brief is over the 4 ½ year period from January 1, 2010 to June 30, 2014.

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This research brief is an update of last year's analysis. As you will see in this brief, private growth companies, as an asset class, have both outperformed the broad market indices and shown improvement on a risk adjusted basis. The potential for outsized returns was demonstrated across the board as private growth companies in different sectors either went public or were acquired at very good valuations.

INTRODUCTION

Although Venture Capital funds have been around since the late 1950's, venture investing has generally been out of reach of the average investor. Venture Capital (VC) firms typically raise funds in private placements from institutional investors like pension and endowment funds as well as family offices. Furthermore, VC returns are highly concentrated in the top decile of VC firms, and access to these select funds is extremely limited.

During the last decade, a few important trends changed the landscape for VC investments. First, the time to exit for VC-backed companies extended, leading to an increase in value and wealth generation before an exit, and increased pressure from employees and early investors to provide liquidity. This fueled the emergence of alternative trading platforms that made secondary transactions in private companies more efficient and scalable. As a result, these developments have opened up new opportunities for investments in late stage VC-backed private companies with significant revenue and growth. With the accessibility of private growth company (PGC) shares through alternative trading platforms, direct investments are now available to accredited investors. In addition, new PGC investment vehicles have emerged that enable all investors to access the potential upside of this alternative asset class.

This research brief will examine PGCs as an alternative asset class, reviewing its risk and return characteristics, and its contribution to an investor's portfolio. Specifically, the returns of a hypothetical basket of PGC shares will be reviewed over the last four and a half years.[1]

[1] A description of the construction of the private growth company basket is outlined in Appendix A. The analytical period for all investments covered in this research brief is over the 4 1/2 year period from January 1, 2010 to June 30, 2014.

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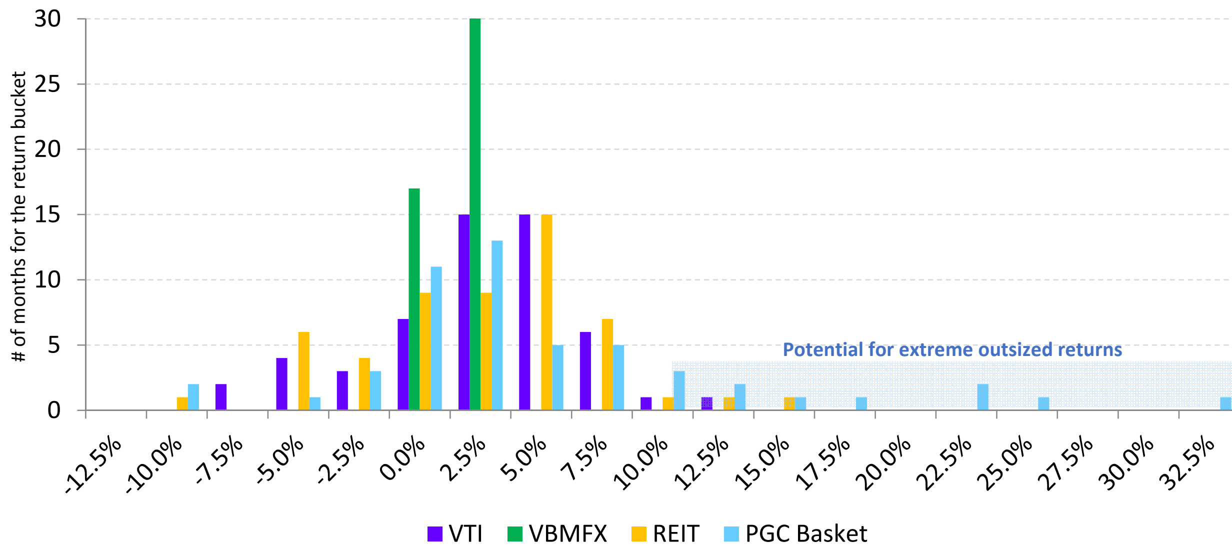
RISK AND RETURN CHARACTERISTICS: COMPARISON WITH KEY INDICES

A few of the most commonly held passive mutual funds include Vanguard's Total Stock Market Fund (VTI), Vanguard's Total Bond Index Fund (VBMFX) and Vanguard's REIT Index Fund (VGSIX). These index funds have low management fees and are used by many investors, both institutional and retail, to construct their core investment holdings.

Comparing the distribution of monthly returns of a basket of PGCs as transacted on the SharesPost platform against those of the before mentioned Vanguard funds, we find that a basket of PGCs exhibits a wider dispersion of returns, as expected (Exhibit 1). Note the extreme skew of the PGC returns towards outsized returns. The ability of PGCs to deliver these outsized returns should not come as a surprise since those companies are developing new products, businesses and markets with their attendant high revenue growth.

EXHIBIT 1: MONTHLY RETURNS: PRIVATE GROWTH COMPANY BASKET VERSUS KEY INDICES



Past performance displayed in the exhibit is no guarantee of future results.

Source: Pacifica Strategic Advisors LLC, Vanguard Group, Inc. and SharesPost Financial Corporation

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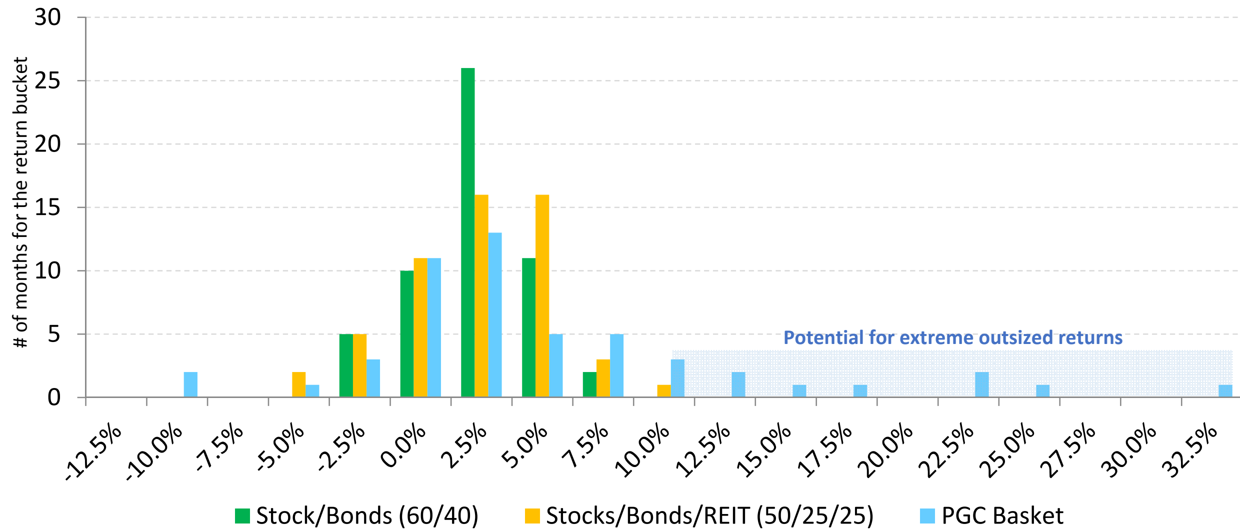
RISK AND RETURN CHARACTERISTICS: COMPARISON WITH BENCHMARK HOLDINGS

Some of the more popular investor benchmark holdings include the 60/40 (consisting of 60% equities and 40% bonds) and the 50/25/25 portfolios (consisting of 50% equities, 25% bonds and 25% REIT's). Constructed using the Vanguard index funds, these two portfolios are useful model benchmarks representative of the core holdings of an average investor. Although the PGC basket exhibits a wider return dispersion than the two benchmark portfolios, it benefits from the potential of outsized returns (Exhibit 2).

EXHIBIT 2: MONTHLY RETURNS: PRIVATE GROWTH COMPANY BASKET VERSUS BENCHMARK PORTFOLIOS



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RISK-ADJUSTED RETURN ANALYSIS

As expected, PGC shares are a high return, high volatility asset class. But upon closer examination, we see that a significant percentage of the volatility is due to outsized up moves, which is the key motivation for investing in PGC shares.

Exhibit 3 summarizes the risk, return, and risk-adjusted return (Sharpe ratio) for the individual funds, the benchmark portfolios and the PGC basket.[2] Over the course of the last 4 1/2 years the PGC basket delivered a 73.49% return although at the price of an extreme standard deviation of 111%. The resulting low Sharpe ratio for the PGC basket is misleading in two significant ways. First, Sharpe ratios are calculated from the standard deviation of returns, which comprise of both up and down deviation from the mean return. Given the extreme upside return potential of PGCs, this upside potential is discounted as unwanted risk by the Sharpe ratio. Second, the diversification benefits to a core benchmark portfolio of owning PGCs are totally ignored. Before investigating the diversification effects of PGC holdings on a benchmark portfolio, let us first resolve the issue of the asset class's risk-adjusted return.

EXHIBIT 3: GROSS RETURN AND RISK ANALYSIS (1/1/2010 TO 6/30/2014, ANNUALIZED)

	VTI	VBMFX	REIT	Stock & Bonds (60/40)	Stocks, Bonds & REITs (50/25/25)	PGC Basket
Return	15.80%	4.27%	16.35%	11.34%	13.25%	73.49%
Std Dev.	14.20%	2.79%	16.65%	8.14%	10.42%	111.12%
Sharpe Ratio	0.944	0.671	0.839	1.098	1.042	0.640

Past performance displayed in the exhibit is no guarantee of future results.

Source: Pacifica Strategic Advisors LLC, Vanguard Group, Inc. and SharesPost Financial Corporation

From the distributional analysis of Exhibits 1 and 2, the return variance of PGCs is substantially skewed to the upside of the mean return of 7.32%. An analysis of its semi-variance (standard deviation due to down moves) in Exhibit 4 reveals that a little more than one third of its return standard deviation is due to downside risks while almost two thirds of its standard deviation is due to up moves. This skew towards higher return potential compares favorably to both the 60/40 and 50/25/25 benchmark portfolios, which have more symmetrical return variances.

EXHIBIT 4: RISK ANALYSIS: BREAKDOWN OF STANDARD DEVIATIONS OF DIFFERENT INVESTMENTS

	VTI	VBMFX	REIT	Stock & Bonds (60/40)	Stocks, Bonds & REITs (50/25/25)	PGC Basket
Std Dev.	14.20%	2.79%	16.65%	8.14%	10.42%	111.12%
Semi Variance	8.41%	1.76%	9.17%	4.41%	6.40%	38.90%

Past performance displayed in the exhibit is no guarantee of future results.

Source: Pacifica Strategic Advisors LLC, Vanguard Group, Inc. and SharesPost Financial Corporation

In Exhibit 5, we see that the Sharpe ratio is greatly improved for PGC returns when we replace standard deviation with a purer risk estimate in the form of semi variance. With an adjusted Sharpe of 1.828, a basket of PGC shares

[2] Sharpe ratios were calculated using an interest rate of 2.40% interpolated from U.S. Treasury rates on January 1, 2010 for a bond maturing in 4 1/2 years.

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provided 1.828% return per 1% of downside risk and is superior to the traditional asset classes of equities, bonds and REITs when compared against their exchange traded fund proxies of VTI, VBMFX and VGSIX.

EXHIBIT 5: ADJUSTED SHARPE RATIO INCORPORATING ONLY DOWNSIDE RISK

	VTI	VBMFX	REIT	Stock & Bonds (60/40)	Stocks, Bonds & REITs (50/25/25)	PGC Basket
Sharpe-SemiVar	1.594	1.064	1.523	2.027	1.694	1.828

Past performance displayed in the exhibit is no guarantee of future results.

Source: Pacifica Strategic Advisors LLC

SIGNIFICANT DIVERSIFICATION EFFECTS

In general, alternative assets, such as private equity and hedge funds, are never held as standalone investments, but rather, complements to core investments. PGC shares are no different. As seen in Exhibit 6, PGC returns essentially have no correlation with the 60/40 and the 50/25/25 benchmark portfolios. The low and negative correlations suggest that PGC returns provide substantial risk-reducing, diversification effects to the benchmark portfolios of the average investor.

EXHIBIT 6: PGC BASKET MOVES INDEPENDENTLY OF KEY INDEX FUNDS AND BENCHMARK PORTFOLIOS

	VTI	VBMFX	REIT	Stock & Bonds (60/40)	Stocks, Bonds & REITs (50/25/25)
Correlation to PGC Basket	-3.14%	5.86%	9.01%	-2.43%	1.88%

Past performance displayed in the exhibit is no guarantee of future results.

Source: Pacifica Strategic Advisors LLC

CORRELATION AND PORTFOLIO DIVERSIFICATION

The level of correlation of an asset to an investor's portfolio determines the extent to which that asset will reduce the overall riskiness of that portfolio. Low or zero correlation assets will reduce the overall riskiness of a portfolio. Negatively correlated assets can go further, and serve as hedges against down moves by that portfolio.

The theoretical limits of the correlation between an asset and a portfolio is -100% to +100% (i.e. -1 to 1). At one end of the extremes, a 100% correlated asset will move in lockstep with the portfolio. For example, if the portfolio moves up by 3%, then the asset moves up by 3%. Likewise a down move in the portfolio will result in an equal down move in the asset. Note that such an asset provides no diversification benefit to the investor's portfolio.

A -100% correlated asset -- perfectly negatively correlated asset -- will move in lockstep in the opposite direction, e.g. the asset will fall 3% for a 3% up move in the portfolio. Such an asset would be of value as a hedge to the portfolio.

A more interesting case is a low correlation asset. Such an asset would move independently of the portfolio providing true diversification, thus, reducing the portfolio's overall risk. In general, an asset would be considered to be lowly correlated to a portfolio if it's correlation falls between -25% to +25%. As we can see in Exhibit 6, the PCG Basket, over the period 1/1/2010 to 6/30/2014, satisfies this definition of a low correlation asset relative to the major indices and the benchmark portfolios.

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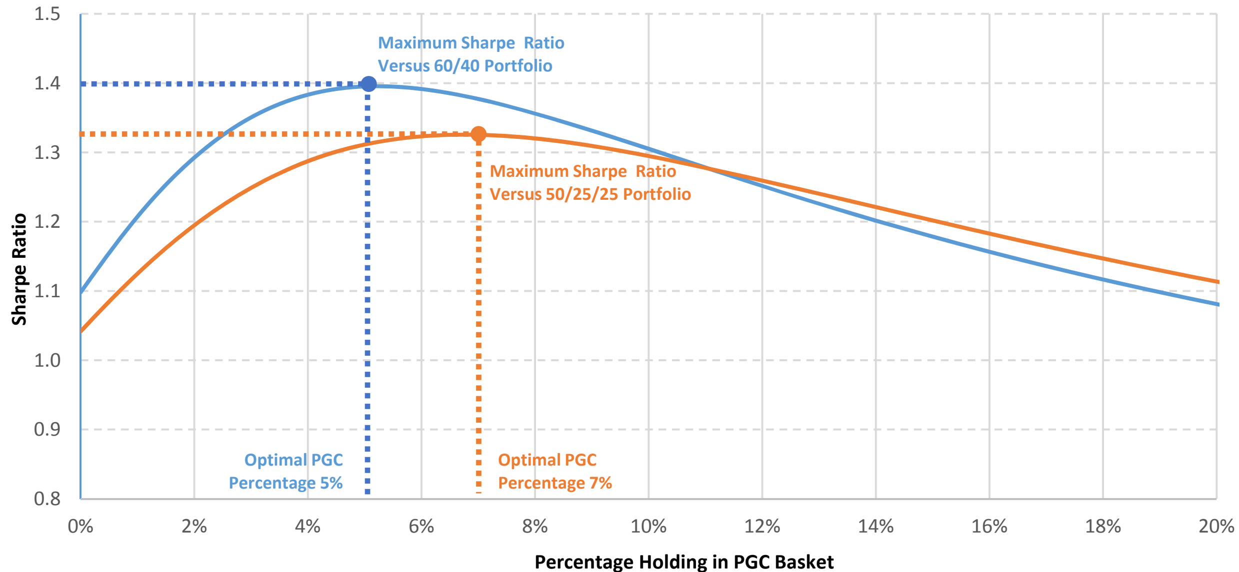
In Exhibit 7, portfolios consisting of a basket of PGC and the benchmark portfolios were analyzed. By increasing the amount of the PGC basket (relative to the benchmarks) to an optimal percentage, the Sharpe ratio (risk-adjusted return) for the composite portfolio was materially improved. Based on this analysis, the optimal percentage holding of the PGC basket for an investor with a 60/40 portfolio is 5% (e.g. for an investor with $100,000 to invest, $95,000 would be allocated to the 60/40 portfolio, while $5,000 would be allocated to the PGC basket). Repeating the analysis for the 50/25/25 portfolio would indicate an optimal PGC allocation of 7%

EXHIBIT 7: OPTIMAL PERCENTAGE HOLDING OF PGC BASKET VERSUS BENCHMARK PORTFOLIOS



Past performance displayed in the exhibit is no guarantee of future results.

Source: Pacifica Strategic Advisors LLC

In Exhibit 8, the impact of holding the optimal allocation of the PGC basket is summarized. Over the last 4 1/2 years, an investor holding a 60/40 portfolio would have experienced a 11.34% return with 8.14% volatility on an annualized basis. However, by adding a basket of PGC shares in an optimal amount equal to 5% of the total holdings, an investor would have improved his/her annual returns to 15.53% with a marginal volatility increase to 9.41%. The overall improvement in risk-adjusted return would be a Sharpe ratio increase from 1.098 to 1.395.

EXHIBIT 8: RETURN AND RISK ANALYSIS: 1/1/2010 TO 6/30/2014

		Stock & Bonds (60/40)	95% (60/40) 5% PGC	Stocks, Bonds & REITs (50/25/25)	93% (50/25/25) 7% PGC
Annualized	Return	11.34%	15.53%	13.25%	19.01%
	Std Dev.	8.14%	9.41%	10.42%	12.54%
	Sharpe Ratio	1.098	1.395	1.042	1.325
	Total Return	62.13%	91.47%	75.03%	118.87%

Past performance displayed in the exhibit is no guarantee of future results.

Source: Pacifica Strategic Advisors LLC

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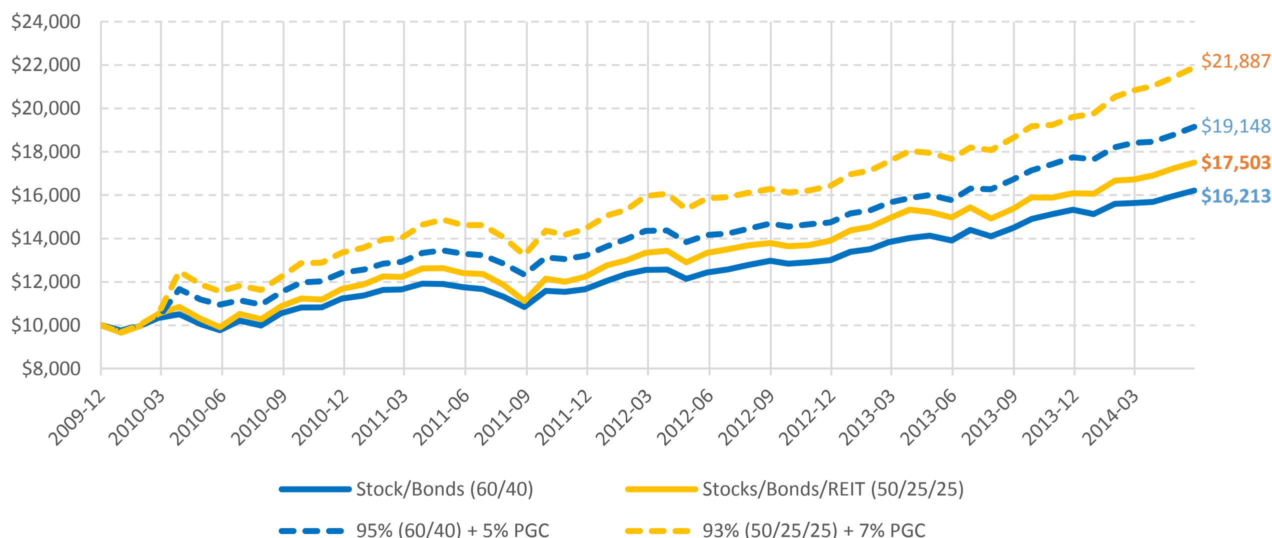
Repeating the same analysis for the 50/25/25 benchmark portfolio, but with an optimal 7% PGC basket composition, annual returns would increase from 13.25% to 19.01% (a 5.77% improvement) with only an annualized volatility slippage from 10.42% to 12.54% (a 2.12% deterioration). Risk-adjusted returns, in the form of the Sharpe ratio, would improve from 1.042 to 1.325.

The benefit from adding PGC shares to an already well diversified portfolio was materially evident over the 4 1/2 year investment period. The low return correlation of a basket of PGC shares to the benchmark portfolios commonly held by investors allowed for material improvements from fairly small percentage additions. In Exhibit 9, an investor -- whose core holding is a 60/40 portfolio and who allocated the optimal 5% to the PGC basket -- would have experienced 18.1% higher returns (e.g. $19,148 versus $16,213 in the chart below). The investor with a 50/25/25 portfolio who had an optimal 7% allocation to the PGC basket would have experience 25.1% improvement in returns (e.g. $21,887 versus $17,503).

EXHIBIT 9: GROWTH IN $10,000 INVESTED: JANUARY 1, 2010 TO JUNE 30, 2014



Past performance displayed in the exhibit is no guarantee of future results.

Source: Pacifica Strategic Advisors LLC

An investor who had allocated an optimal percentage (5% to the 60/40 portfolio and 7% to the 50/25/25 portfolio) to the private growth company basket and the remainder to a core benchmark portfolio would have seen return improvements as shown above.[3] Note that a 15% to 20% allocation to alternative assets is not uncommon among institutional accounts, such as university endowments and pension funds.

[3] The determination of the optimal percentages for the 60/40 and 50/25/25 portfolios can be seen on Exhibit 7, where their Sharpe ratio is maximized.

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CONCLUSION

The best alternative assets provide exposure to markets, companies and products not normally accessible by more traditional investments. Such potentially higher, non-correlated returns, when added to commonly held holdings, such as the 60% equity/40% bond portfolio or the 50% equity/25% bond/25% REIT portfolio, have exhibited improvements not only on gross returns, but also on risk- adjusted returns.

Over the analytical 4 1/2 year period, returns from holding PGC shares provide strong evidence of fitting the definition of an "ideal" alternative asset. Its high upside potential relative to its downside risks resulted in high net returns. Its low correlation to commonly held investment portfolios provided excellent risk-adjusted return improvements at low percentage additions.

Although this asset class only has a relatively short 4 1/2 year available trading history, the research done to date indicates that this alternative asset is should be considered an important addition to the portfolios of many investors. More importantly, retail investors who previously did not have access to this asset class, now do through different investment options; many of which can potentially improve the risk and return profile of a portfolio.

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APPENDIX A: PRIVATE GROWTH COMPANY BASKET CONSTRUCTION

For the purpose of analyzing the returns from investing in private growth company shares, an investment basket of private growth company shares was created and tracked over the 4 1/2 year analytical period. The trading data and share prices for the analysis were provided by SharesPost Financial Corporation and was extracted from their trading database. The framework for the construction of the basket was developed by Pacifica Strategic Advisors using a naive, passive investment approach as outlined in the table below.

Note that a more active investment approach may potentially improve the returns of this private growth company basket.

Data	1. The first transactions were from the second half of 2009, when the SharesPost platform became active and available for transactions. 2. Only issuers whose shares have transactions in at least two separate months were used (i.e. at least two transactions in two separate months).
Basket Construction	1. $100,000 was allocated to the purchase of the shares of each issuer (subject to data availability outlined in the Data section). An assumption was made that $100,000 worth of shares can be purchased at the price that the shares were first available on the SharesPost platform. 2. Shares were held in the basket until the end of the month in which lock-ups expired (for issuers that have IPO'd), or until June 30, 2014, whichever came first. 3. Cash to purchase shares in new issuers was assumed to be available as needed. 4. Cash resulting for the disposition of a position was removed from the portfolio. 5. Shares of issuers IPO'd were marked against the closing price at the end of the month 6. Shares of issuers still private were marked against their last transaction. 7. The monthly returns of the basket were calculated from those positions that existed in the month which the return is calculated and its prior month. This resulted in a month over month return series from January 1, 2010 to June 30, 2014.
Basket Return Calculation	1. All return calculations were based off of the month over month calculations in Basket Construction item 7. 2. Aggregate calculations for the basket over the entire period was done by compounding the month over month returns.

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DEFINITIONS

Annualized Return: Return of an asset expressed as an annual percentage rate, the rate that an investors would receive from the asset is held for a full year, or in the case of a multi-year holding period, the average return from the asset per year.

Optimal percentage: In the context of this research brief, the optimal amount of the PGC basket as a percentage of total holdings that would result in the maximum risk-adjusted return as measured by the Sharpe ratio.

REIT: Real Estate Investment Trust. A portfolio of real estate holdings held in a trust structure with ownership stakes sold in the form of traded shares.

Semi variance: The volatility attributable to downside movements or movements below a certain threshold. In the context of this research brief, semi variance is defined as the standard deviation of returns below a return of 0% (i.e. negative returns).

Sharpe Ratio: the amount of return provided above the risk-free rate per unit of return volatility as estimated by the asset's standard deviation. The equation for the Sharpe Ratio is

[Return(asset) - Return(risk-free rate)]/Standard Deviation(asset)

Sharpe Ratio SemiVar: Sharpe ratio based on the asset's semi variance as opposed to its standard deviation. Since risk as perceived by investors is the possibility of a loss due to downside movements, Sharpe Ratio-SemiVar is viewed by astute investors as a better estimate of risk-adjusted return.

Total return: The cumulative return of an asset over its holding period. Total returns are not annualized, unless the holding period is exactly one year.

RESEARCHERS

Tony D. Yeh is the managing partner in charge of investment analytics and capital market intelligence. With over 20 years of experience in investment research and asset management, he has advised top financial institutions such as Blackrock Inc. and Singapore's GIC on issues of investment allocation and portfolio risk management.

Ning Guan is the chief investment officer of QuantScape Asset Management. A former Morgan Stanley investment banker, she now runs the Equity Index Program, a successful quantitative trading program that captures the mispricing of index futures and options. She is an expert on return attribution of alternative assets.

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