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# UNDERSTANDING STRUCTURED NOTES AND THEIR ROLE IN PORTFOLIO CONSTRUCTION

## Abstract:

The information about Structured Notes and their role in portfolio construction is remarkably limited. In this paper, we try to aggregate credible research to assist fiduciary based advisors in making an informed portfolio construction decision. Structured notes are not one asset class, but a type of product structure that is created to meet different client objectives, such as income, growth, or principal protection. Advisors that take the time to consider structured notes may be pleasantly surprised by both their possible role in portfolio construction and their potential to be a competitive differentiator.

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## INTRODUCTION

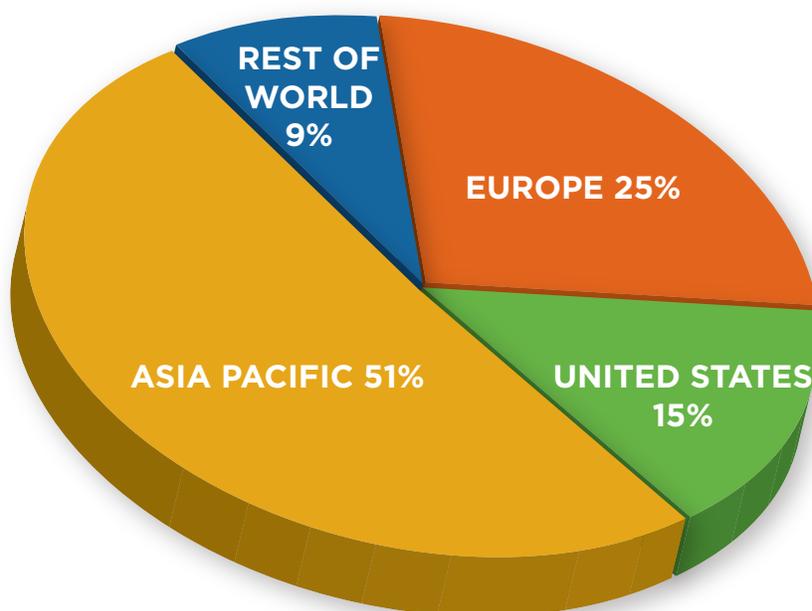
Structured notes are a large part of today's financial market landscape. Globally, investments allocated to structured notes are estimated to be in excess of \$2 Trillion (Figure 1). Even though structured notes have been issued in the US since the mid-1990s, the availability of information for financial advisors is relatively scarce. With equity markets near all-time highs and interest rates near historic lows, there's been a growing interest in the use of structured notes in the portfolio construction process. Considering the size of this market and limited available information, it strikes us as an opportunity for fiduciary based advisors to gain a competitive edge against the competition.

A structured note is a financial instrument generally issued by a large well-known financial institution. The terms vary both in time to maturity and market exposure. Each month banks bring out their list of calendar offerings. It is important to point out that issuers split their calendar terms between brokerage offerings, where brokers are paid an upfront commission, and advisory offerings. Because advisory offerings are for fee-based or fiduciary advisors, the issuers can strip out the commissions and provide more competitive terms for the end investor. This paper is specifically directed toward fiduciary based advisors and advisory based offerings. With monthly calendar runs, multiple bank issuers, and changing market conditions, structured note issuance is very large and diverse. Here we organize the offerings into three main types that fiduciary based advisors are most likely to incorporate.

Structured notes are not one asset class, but a type of product structure that is created to meet different client objectives, such as income, growth, or principal protection. What differentiates structured notes relative to other financial assets is that they are one of the few investment vehicles that can be used to provide a defined outcome.

In this paper, we provide a thorough foundation for understanding structured notes and their possible role in portfolio construction. We will introduce ideas that can help investors earn competitive returns regardless of whether the markets are going up, down or sideways.

**Figure 1. Estimated Geographic Distribution of approximately \$2.1 Trillion in Outstanding Structured Notes**

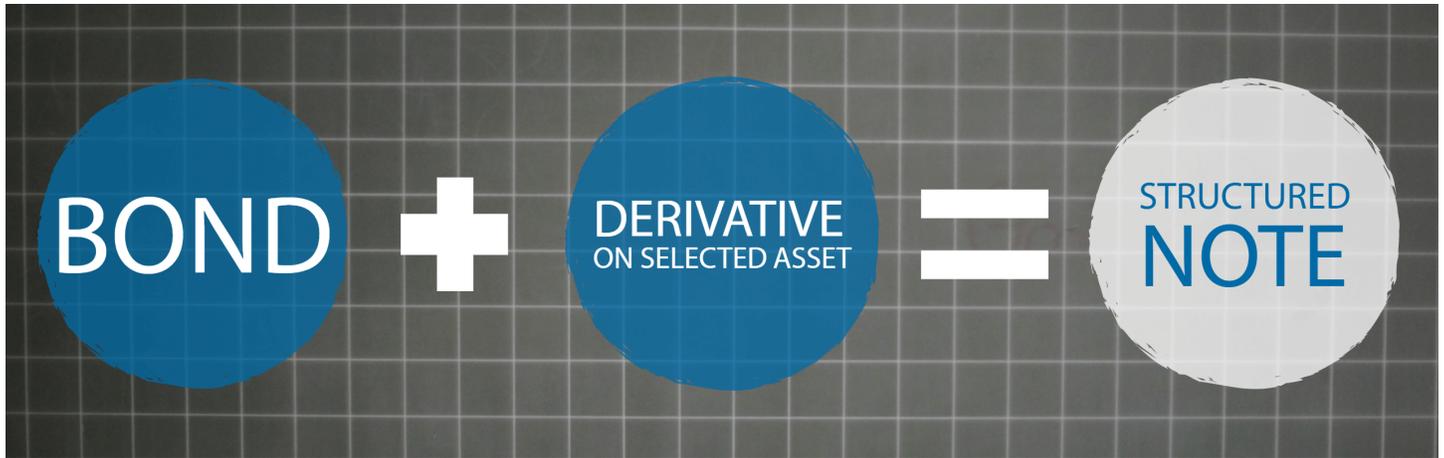


Source: [www.structuredretailproducts.com](http://www.structuredretailproducts.com)

## STRUCTURED NOTES

Structured notes are financial instruments which consist of two main parts combined to generate a specific risk/return profile. In their most basic form, structured notes are investments that combine a “low risk/low return” component of bonds with a “higher risk/higher return” derivative on a selected asset, often equities or equity indexes (Figure 2).

**Figure 2. Basic Note Structure**



This highly flexible basic model makes it possible for investors to benefit from practically any price move in a specific underlying asset, be it stock, index, currency or commodity. As a result, structured products are commonly used as a portfolio enhancement tool to augment returns while limiting the risk of loss of capital. Due to the highly customizable nature of structured products, the individual “risk/return” profile of each note can be calibrated so that the individual requirements of each investor are met.

Structured Notes are not about owning the underlying security or index, but rather about customizing an investor’s exposure to that underlying asset. Some of the situational uses of structured notes are listed below.

- An investor wants exposure to an equity index, but wants to reduce some of the volatility of owning that equity index;
- An investor wants the potential to earn a higher yield or coupon, while limiting or eliminating interest rate risk;
- An investor wants to find investment strategies for different market expectations (bullish, bearish, or sideways);
- An investor wants to fine-tune their portfolio in line with their risk profile (conservative, moderate, or aggressive);
- An investor wants to broaden their diversification and gain access to different asset classes, investment themes, markets and sectors.

## STRUCTURED NOTES VS. MUTUAL FUNDS VS. HEDGE FUNDS

Mutual Funds and Hedge Funds are widely known investment vehicles that have enjoyed much more publicity than Structured Notes. Given that these investment vehicles are likely more familiar to investors and advisors, a comparison of those investment vehicles relative to structured notes is below (Figure 3). In summary, investments in structured notes are not generally riskier than an investment in mutual funds or hedge funds, they just have a different structure. This different structure allows structured notes to provide a unique value proposition that mutual funds and hedge funds are not set up to do.

**Figure 3. Mutual Funds vs. Hedge Funds vs. Structured Notes**

TRADITIONAL MUTUAL FUNDS	HEDGE FUNDS	STRUCTURED NOTES
Participation proposition	Performance proposition	Payment proposition
Asset class exposure	Trading strategy	Customized market exposures
Market Risk	Manager Risk	Issuer Risk
Investor owns shares	Investor is a limited partner	Investor is a creditor
Issued by investment management firms	Issued by boutique investment managers	Issued & backed by large financial institutions
Investment Company Act of 1940	Loosely regulated	Securities Act of 1933
Open-Ended availability, size concerns vary	Availability dependent on manager discretion	Issued with a defined maturity date
Expense ratio	Annual management fee plus incentive fee	Structuring fee embedded in terms
Daily liquidity at NAV	Lock-up periods and limited access	Semi-liquid, but designed to be held to maturity
Available for small investment sizes	Usually requires large investment sizes	Available for large and small investment sizes
Marketed to all investors	Marketed to accredited investors	Marketed to financial professionals

## ISSUERS OF STRUCTURED NOTES

Structured notes are generally originated by well-known financial institutions, largely banks (Figure 4). The banks then distribute the offering either directly, or in conjunction with a distribution partner, in the marketplace. The bank essentially serves as a product manufacturer and bears risk for structuring the note. The issuers have a structured note desk where they manage their proprietary models. By choosing the terms of the note, the issuer is attempting to attract capital for the bank while hedging out their market risk.

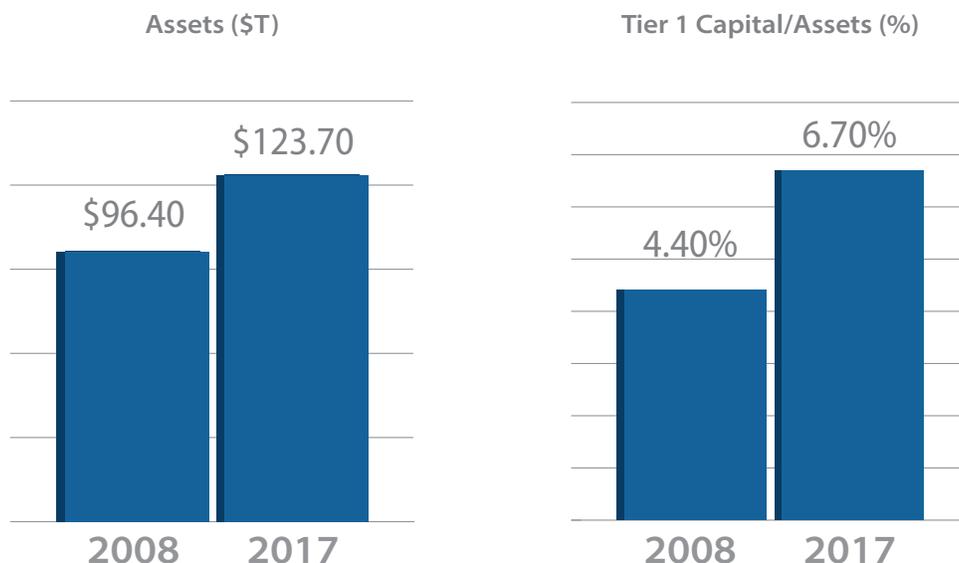
**Figure 4. Common Issuers in the U.S.**

JP Morgan Chase	HSBC Bank	RBC
Credit Suisse	ScotiaBank	CIBC
Barclays Bank	Bank of America	Wells Fargo
Goldman Sachs	UBS	Societe General
Morgan Stanley	Citigroup	Bank of Montreal

Note: Not an endorsement or a full list, only for reference purposes.

After issuance, each structured note maintains a fair value based on the issuer’s model, which is likely to differ from the initial par value of the note. Issuers use their model price to set a secondary market value on each note during the term of the note. At maturity, the issuer is still responsible for making good on the terms of the note regardless of the accuracy of their model. This discrepancy between issuer’s model and real world outcome introduces issuer risk. Even though, a decade after the crisis, global banks are in a much better position today (Figure 5), it is important for investors to consider the quality of the financial institution issuing structured notes.

**Figure 5. Top 1,000 Global Banks**



Source: Deloitte®

## TYPES OF STRUCTURED NOTES

The versatility of structured notes allows them to provide a myriad of payout structures. Coupled with confusing industry jargon, it makes it difficult to compare products. However, in the end, structured notes can really be categorized based on their risk levels and divided into 3 main types (Figure 6).

It should be noted that structured notes are not, generally, more risky than direct investments in equities, currencies or commodities. In fact, there are numerous product types that, in contrast to direct investments, offer safety mechanisms or even capital-protection guarantees. It should also be mentioned that there are certain products that pose a greater risk of loss than a direct investment as they are designed to respond disproportionately to the price movement of the underlying.

### Principal Protected Notes

Principal Protected Notes guarantee some or all of the investors capital back at maturity plus any participation in the performance of the underlying asset(s). The upside payoff allows the investor to participate in a certain percentage of the gains of an equity index (or other asset) up to a certain maximum return or cap over the term of the note.

### Income Notes

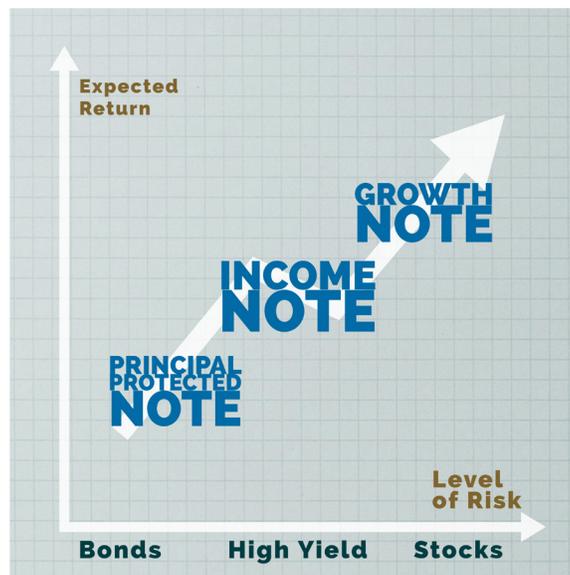
Income notes provide an investor with the opportunity to receive above average periodic income payments. The upside potential on income notes is simply the coupon yield. The principal is usually protected up to a certain downside barrier or level of an underlying equity index (or other asset). If the barrier level is breached during the term of the note, the principal value of the note is marked-to-market and can rise or fall as the underlying index rises or falls until the maturity date.

### Growth Notes

Growth notes provide investors with exposures closely linked to the performance of the underlying equity index (or other asset) with certain additional features. Growth notes can provide upside participation in an equity index (or other asset) while also allowing for some downside protection against some of the underlying asset's losses. Growth notes can also be structured to provide leveraged exposure.

**Figure 6. Notes & Risk Levels**

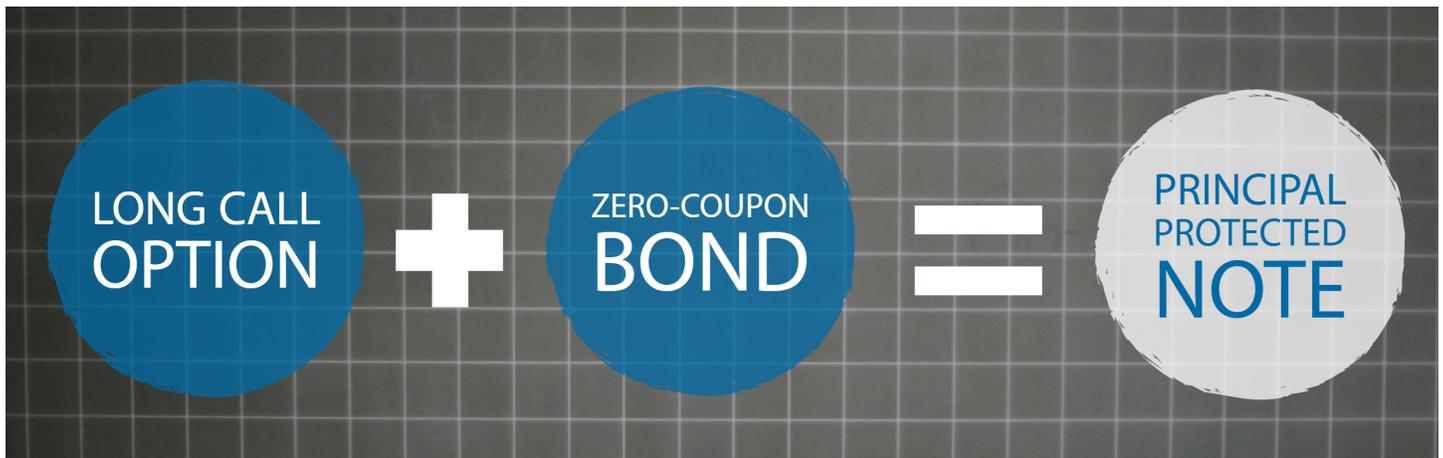
Note: Individual note terms will dictate both the level of risk and expected return



## PRINCIPAL PROTECTED NOTES

The goal of a Principal Protected Note is to gain exposure in an average-to-high risk asset such as stocks, with a limited downside risk to your investment. In exchange for limited downside, the note allows for upside participation in the asset up to a maximum return or “cap.” The note is structured by the issuer by buying a zero-coupon bond and a long call option on an underlying asset. The zero-coupon bond is purchased at a discount and will mature at par value, providing the capital protection while the option provides the upside participation (Figure 7).

**Figure 7. Basic Structure of a Principal Protected Note**



Principal Protected Notes might be an appropriate instrument for an investor who does not have a strong opinion about the future direction of the market, but wants to capture some or all of the possible upside in case the markets turn higher. A principal protected note adds a dimension of defined downside to a portfolio. This type of note has features that share a similarity with a fixed index annuity without the annuity wrapper. By excluding the annuity contractual terms, the note terms can be a little more investment oriented, namely shorter terms and higher maximum (“cap”) returns. To clarify, the structured note is not an annuity or a substitute for an annuity contract, rather it shares some of the investment features that investors might find attractive.

Two factors impact the terms of a Principal Protected Note:

### Interest Rates

Higher interest rate levels lower the present value of zero-coupon bonds allowing for more capital to be allocated towards purchasing call options on the underlying which in turn leads to a higher participation rate in the underlying. With lower interest rates the present value of the zero-coupon bond would be higher, limiting the amount of capital allocated toward purchasing the call options which would reduce the participation rate.

### Volatility

Lower volatility depresses the value of the options allowing for more option contracts for the same amount of capital. Higher volatility increases the value of the options limiting the number of option contracts that can be purchased.

## PRINCIPAL PROTECTED NOTES ILLUSTRATION

Principal protection comes in full or partial design formats. As the name suggests, Partially Protected Notes guarantee a specified minimum repayment of capital at maturity (Figure 8). This design flexibility allows for the issuer to adjust to market conditions while still maintaining the majority of the benefits of this type of note (Figure 9).

**Figure 8. Common Terms of a Partial Principal Protected Note**

Issuer:	Big Bank
Term:	24 Months
Underlying Asset(s)	S&P 500 Price Return Index
Participation Rate:	100% participation up to the maximum amount over the term of the note
Minimum Amount (Principal Protection):	95% principal protection. The investor will receive at a minimum 95% of their principal back at maturity (defined maximum loss of 5% over the term of the note)
Maximum Amount:	Max gain (“cap”) of 20% over the term of the note

**Figure 9. Basic Illustration of a Partial Principal Protected Note**

SPX Return	Note Return	Payment at Maturity	Note Terms
30%	20%	\$1,200	Capped at 20%
20%	20%	\$1,200	100% Participation
10%	10%	\$1,100	100% Participation
0%	0%	\$1,000	Return of Principal
-10%	-5%	\$950	95% Principal protection
-20%	-5%	\$950	95% Principal protection
-30%	-5%	\$950	95% Principal protection

The ability to define a maximum loss regardless of market conditions can be a comforting and differentiating feature for many investors. Investors can decide based on the terms if the trade-off is reasonable relative to other investment opportunities. As with other notes, terms may change monthly as market conditions change.

## INCOME NOTES

The goal of an Income Note is to generate higher income relative to bonds of similar maturity. These notes blend soft principal protection, an enhanced yield, and a degree of downside risk. Soft protection means that the investor’s principal is protected down to a certain level (typically in the 20-40% range) in an underlying asset. This level is called the barrier or trigger level (Figure 10).

Once the trigger level is breached, the principal is no longer protected, hence the term conditional or soft protection. At the point of a breach, the soft protection provision is no longer valid and the principal value is linked to the value of the underlying asset and rises or falls as the underlying asset rises (up to the initial level) or falls until maturity. It is possible after a breach that the underlying asset rises all the way back and the investor does not lose principal. Because of this risk, it is important to balance the yield offered with the trigger level. As long as the trigger level is not breached, the investor receives the coupon payments plus their principal. Depending on the structure of the note, the coupon might be contingent (on breaching the barrier) or guaranteed.

**Figure 10. Common Terms of an Income Note (also called an Auto Callable Yield Note)**

Issuer:	Big Bank
Term:	12 Months
Yield (Coupon):	7.50% annually, paid in quarterly installments (guaranteed coupon)
Underlying Asset(s):	S&P 500 Index and Russell 2000 Index; the note pays off on the lower performing of the 2 indexes in the case of a breach of the barrier level (also called “worst-of”)
Trigger/Barrier Level:	70% of Initial Index Level; for example, if the initial Index level is 1,000, the trigger level would be 700 - a breach of this level by either index would be a trigger event
Call Feature:	Auto Callable quarterly (every 3 months); if both indexes are at or higher than their initial level on the call observation dates, the note is called at <u>par value</u> plus interest for the period

Two main factors impact the terms of an income note:

### Volatility

Higher volatility increases the value of options, so a seller of options would receive more of a premium and vice versa. The higher premium during periods of higher market volatility translates into a higher coupon offering.

### Barrier or Trigger Level

Issuers might use different terms, but in general they are the level at which any principal protection features would no longer apply for the term of the note. The more cushion against a decline in the underlying asset an investor desires before a trigger level is breached, the lower the coupon.

## INCOME NOTES ILLUSTRATION

**Figure 11. Basic Illustration of an Income Note with Terms from Figure 10**

	No Trigger Event Flat Market	No Trigger Event Down Market	Trigger Event No Market Recovery	Trigger Event Partial Market Recovery
Yield (Coupon):	7.50%	7.50%	7.50%	7.50%
Trigger Value:	70% of Initial Index Level	70% of Initial Index Level	70% of Initial Index Level	70% of Initial Index Level
S&P 500 Ending Level:	105% of Initial	72% of Initial	65% of Initial	90% of Initial
Russell 2000 Ending Level:	95% of Initial	78% of Initial	68% of Initial	92% of Initial
Note Maturity Value:	\$1,000	\$1,000	\$650.00	\$900.00
Interest Payment:	\$75.00	\$75.00	\$75.00	\$75.00
Total Principal & Interest:	\$1,075.00	\$1,075.00	\$725.00	\$975.00

An Income Note is not a substitute for a bond, but it can provide diversification benefits to a bond allocation. Specifically, it generates income without assuming interest rate risk. The risk to principal occurs if a trigger event happens. The table below puts some data behind different trigger levels and their historical breach frequencies (Figure 12). The low frequency of barrier breaches at the 30% level might suggest that there is an unlucky factor at play. A prudent way to mitigate the unlucky factor would be to build a ladder of Income Notes.

**Figure 12. Historical Frequency Data on a Breach of the Different Trigger Levels**

	S&P 500			Russell 2000		
Trigger Level	30%	25%	20%	30%	25%	20%
Occurrences	12	20	33	13	33	54
Frequency	3.33%	5.56%	9.17%	3.61%	9.17%	15.00%

Data: Calculations based on rolling monthly observations 06/1989 – 06/2019 (360 total).

## GROWTH NOTES

The goal of a Growth Note is to generate upside participation linked to the underlying asset while providing some level of downside protection. Growth notes can be linked to any asset class, but issuers most frequently use equities or equity indices. The upside maximum return can be capped (usually for shorter terms) or uncapped (usually for longer terms). The upside performance sometimes includes leveraged participation. The level of downside protection is called a buffer or “hard” protection.

One of the more common types of growth notes is the Buffered Return Enhancement Note (Figure 13). This type of note offers enhanced (leveraged) participation of the underlying asset with a downside buffer protection. The payout is based on the levels of the underlying asset at the maturity date, also called point-to-point observation dates.

**Figure 13. Common Terms of a Buffered Return Enhancement Note (BREN)**

Issuer:	Big Bank
Term:	24 Months
Mx Return (Cap):	25% (caps vary)
Underlying Asset(s):	S&P 500 Price Return Index
Enhancement (Leverage):	200% participation in the upside of the underlying index up to the max return
Buffer Amount:	10% buffer - the first 10% of the downside of the index is absorbed by the note

### Participation Rate

The participation rate is the predetermined percentage rate by which the investor will share in the asset gain. While in some cases the participation rate is 100%, typically the percentage is between 150%-300%, providing a multiple of the actual underlying asset's performance. This is a leveraged return that could potentially outperform the underlying asset.

### Buffer

The buffer amount sets the amount of downside protection, typically ranging from 10%-30%. This hard protection protects the investor against the reference asset's initial decline in value. Beyond that, the investor will typically lose 1% of principal for every 1% decline in excess of the buffer protection amount. If investors are comfortable with the upside participation terms, it makes for an attractive note that outperforms the reference asset on the downside.

## GROWTH NOTES ILLUSTRATION

Figure 14. Basic Illustration of a Growth Note with Terms from Figure 13

SPX Return	Note Return	Payment at Maturity	Note Terms
45%	25%	\$1,250	Capped at 25%
35%	25%	\$1,250	Capped at 25%
25%	25%	\$1,250	Capped at 25%
15%	25%	\$1,250	200% Participation up to cap
10%	20%	\$1,200	200% Participation up to cap
5%	10%	\$1,100	200% Participation up to cap
0%	0%	\$1,000	Return of Principal
-5%	0%	\$1,000	Buffer absorbs full loss
-10%	0%	\$1,000	Buffer absorbs full loss
-15%	-5%	\$950	Buffer absorbs first 10% of loss
-20%	-10%	\$900	Buffer absorbs first 10% of loss
-25%	-15%	\$850	Buffer absorbs first 10% of loss

Growth notes can get very creative and provide payoff structures that are unlike other investment vehicles. Some other interesting variations of growth notes that can grab investors' attention have dual directional or digital jump features.

### Dual Directional Feature

A dual directional note (also called a twin-win note) provides positive participation to both the upside and the downside of the underlying asset. In Figure 13, consider that instead of (or in addition to) the 10% buffer, the investor could receive the absolute value of a negative return in the index up to the buffer level. For example, if the index return is -10%, the note would payoff +10%. Dual directional notes are best suited for investors who anticipate the underlying to trade within a certain up and down range.

### Digital Jump Feature

A digital jump (or digital coupon) provides a minimum level of upside return. In Figure 13, consider that instead of a cap, it stated a 20% digital jump. If the index is at or above its initial level at maturity the note payoff digitally jumps to +20% at maturity. Digital notes are best suited for investors who expect a moderately rising market.

## ADVISORS AND STRUCTURED NOTES

Structured note issuance is wide ranging, but rather small in aggregate in the U.S. market (Figure 15). Anecdotally, the use of structured notes by fiduciary based advisors represents only 20% of the total issuance in dollar terms. The sheer number of structured notes has made it difficult for the investment industry to categorize them, but understanding some broad principles about notes provides an information edge that is unique to the advisor.

**Figure 15. Recent Structured Note Issuance in the U.S.**

YEAR	Total Notional Assets for New Issues	Average Size of Transaction	Total Number of Notes	Mutual Funds Assets (For Scale Reference)
2017	\$50.2 Billion	\$3.70 Million	13,490	\$18.7 Trillion
2016	\$38.7 Billion	\$4.10 Million	9,362	\$16.3 Trillion

Source: Morrison & Foerster LLP 2018 & ICI Investment Company Fact Book 2017, 2018.

Reasons advisors have not used structured notes usually center around complexity, liquidity, and availability. Together this combination creates inefficiencies in the marketplace that astute advisors can take advantage of, both from an investment perspective and as a competitive differentiator.

### Complexity

Complexity might be more accurately described as unfamiliarity. Advisors do not need to know complex derivative math to utilize structured notes effectively. That risk is assumed by the issuer. Advisors need to be familiar with the issuer (credit risk), the type of note and payoff terms. Advisors can also leverage an investment platform that can help screen notes and facilitate allocations.

### Liquidity

Liquidity and marketability are two different terms that get interchanged casually. Structured notes are designed to be held to maturity, so naturally there is not much trading that occurs. However, there is a market price provided by the issuer daily based on their pricing model and reported to the industry custodians. If necessary, investors can sell the notes at or near the market price.

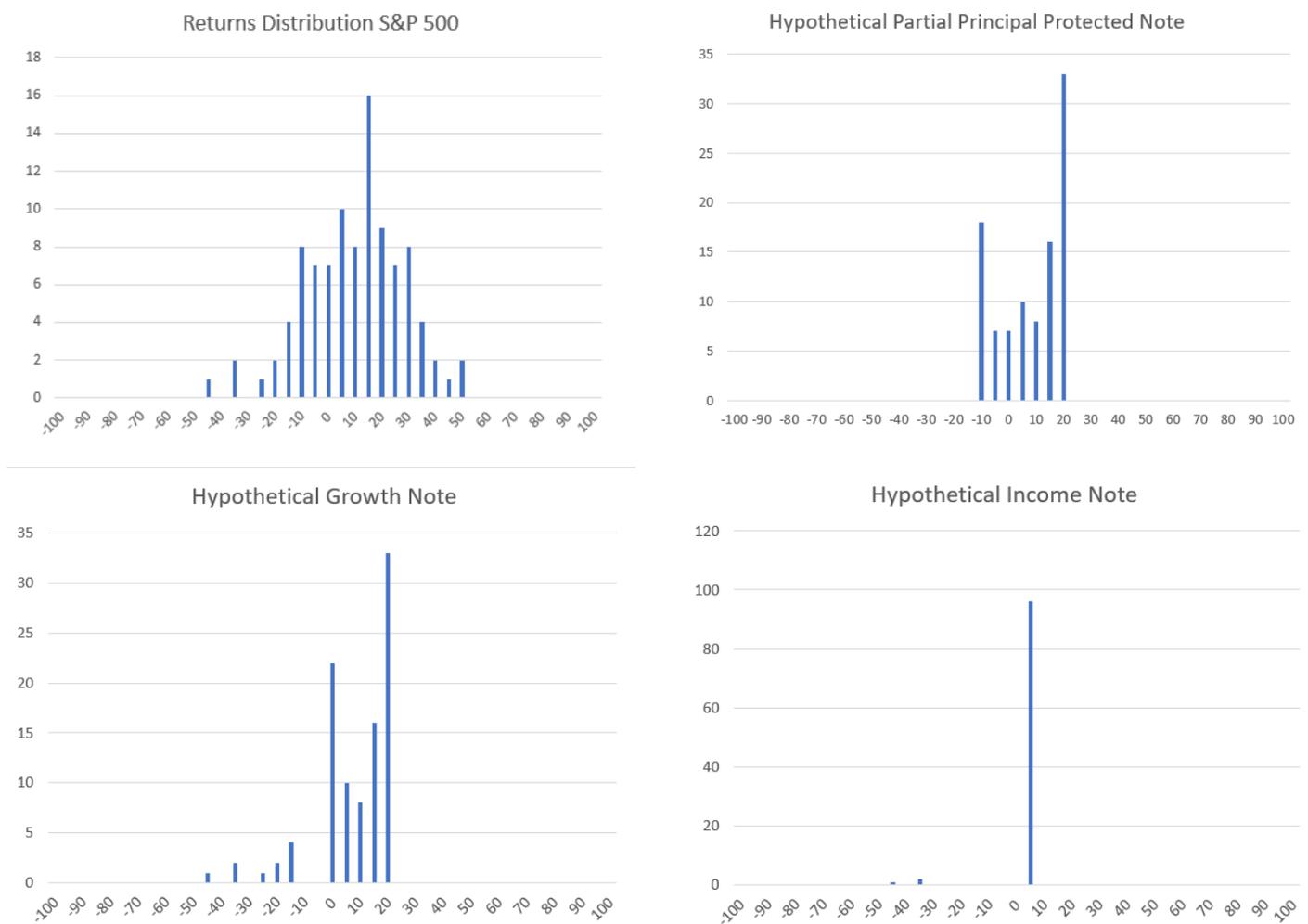
### Availability

Structured notes are available to be held at most of the major custodians. Issuers register their monthly offerings with the SEC and make the roster available to advisors or investment platforms that distribute a curated roster to advisors. Advisors can enter orders with the platform or custodian using the CUSIP number. After purchase, the notes are listed in an investor's account just like any other asset.

## PORTFOLIO THEORY AND STRUCTURED NOTES

As a function of their design, structured note return distributions are not distributed like a normal bell curve (Figure 16). A normal distribution of returns is a foundation for employing the traditional mean-variance analysis for risk and return models found in the Efficient Market Hypothesis, Capital Asset Pricing Model, and Modern Portfolio Theory. Behavioral portfolio theories incorporate investor preferences and individual reference points. In this respect, a key role of an advisor is to match the structured note’s return distribution to the investor’s preference. Structured notes enhance the advisor’s ability to manage a portfolio by shaping the return distribution to more closely resemble the investor’s preferences.

**Figure 16. Distribution of Returns Example**



Note: Example based on S&P 500 annual returns 1921-2018 adjusted per hypothetical note terms.

## PORTFOLIO ALLOCATION FRAMEWORK

### Core-Satellite Portfolio Design

A flexible portfolio allocation framework that blends classical portfolio theory with behavioral theory is a Core-Satellite approach to portfolio design (Figure 17). The Core portfolio would be a diversified portfolio consistent with the investor’s risk profile. The Satellite allocation would allow for customizing the portfolio consistent with the individual investor’s preferences. The appropriate type of structured note would be based on the investor’s preferences or goals and designed to enhance the core portfolio.

Figure 17. Portfolio Design

	CORE PORTFOLIO					CUSTOMIZED SATELLITE TILT		
	Conservative	Moderately Conservative	Moderate	Moderately Aggressive	Aggressive	Preservation of Principal	Income	Growth
Sam & Sally			80%			20%		
Irene			80%				20%	
Gary			80%					20%

### Market Outlook

Investors can also implement structured notes as a portfolio strategy. The portfolio strategy would select different types of notes based on market conditions and the investor’s market outlook (Figure 18).

Figure 18. Framework for Selecting Between Different Types of Structured Notes



## PRINCIPAL PROTECTED NOTE CASE STUDY

Sam and Sally scored a Moderate on their Risk Profile Questionnaire. They know they need to invest for the long-term, but are fearful and would like to protect their principal. Investors often try to add “uncorrelated” strategies to further diversify their portfolio to help reduce volatility. One of the issues with many uncorrelated strategies is that they tend to be a drag on a portfolio’s performance while pursuing uncorrelated returns. Popular reasons that investors allocate to hedge funds are to access opportunities, reduce volatility, and add diversification. Structured notes appear to be broadly comparable in those areas and further add features of customization, defined outcome, and portfolio relevancy.

The table below provides an estimate of historical performance using the terms of the Partial Principal Protected Note from page 9 (Figure 19).

**Figure 19. Performance Table of a PPP note for Illustration Purposes**

2000-2018 (2 Year Periods)	PPP Note	HFOF Index	S&P 500 Price Return	Balanced Portfolio
Average Return	10.07%	6.87%	10.26%	12.38%
Risk (Standard Deviation)	9.75%	9.98%	24.85%	14.20%
Maximum Drawdown	-5.00%	-13.31%	-36.32%	-15.40%
Return:Risk Ratio	1.03	0.69	0.41	0.87

Table data reflects 2 year calendar year point to point periods. HFOF Index is the Hedge Fund of Funds Index. The Balanced Portfolio is a 60% S&P 500 Blend and 40% Total Bond Market blend, rebalanced annually with dividends reinvested. Return:Risk Ratio is the Average Return divided by the Standard Deviation.

**Advisor Notes:**

Investors are not necessarily seeking uncorrelated strategies, rather they are seeking to reduce correlation in bad times. The Partial Principal Protected Note solves for that practical reality. Simultaneously it also allows investors to participate in the upside when markets are moving higher while limiting the investor’s downside risk. Structured Notes can transition the conversation from uncorrelated returns to outcome oriented returns.

## INCOME NOTE CASE STUDY

Irene scored as a Moderate on her Risk Profile Questionnaire. She would like to enhance her portfolio to generate more income. Using recent data, the following is a comparison of the Income Note yields generated each month versus the yield offered in the high yield bond market (Figure 20).

**Figure 20. Income Note versus High Yield**

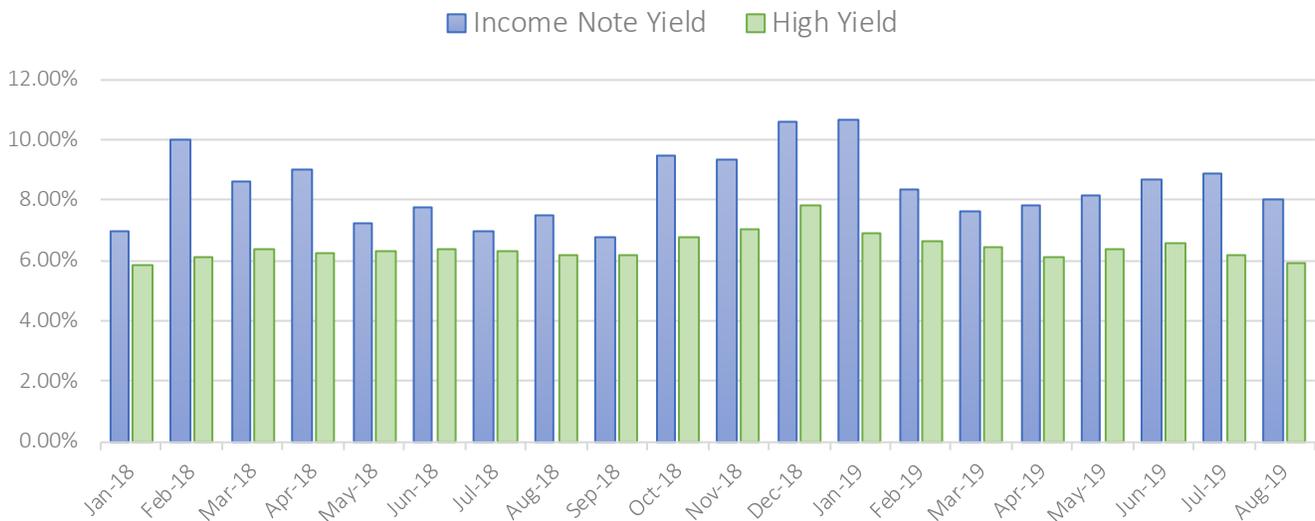


Chart data reflects actual Yields from 12 or 15 month Income Notes issued that have similar structures to Figure 10. The high yield data is represented by the ICE BofAML US High Yield Master II Effective Yield.

**Advisor Notes:**

Income Note yields were consistently higher than income generated by high yield bonds, and the average yield advantage over the observation period was nearly 200 basis points. During periods of heightened stock market volatility (February 2018, October 2018-January 2019), Income Note yields really get a coupon boost.

When simulating results during the financial crisis, because of the trigger event, the downside risk is commensurate with the decline in high yield bonds. However, notes bottomed out well before the actual bottom in high yield bonds or stocks since the trigger level continued to decline with each issue as the market indexes declined.

Income Notes are generally callable before maturity and we estimate that the notes would be called about 70% of the time. Notes would be called if each underlying reference asset is at or above their initial level on an observation date (often quarterly). A note that is called is redeemed at par value plus any accrued interest.

To mitigate the impact of a trigger event or a call, investors can ladder these notes and prudently manage these risks.

## GROWTH NOTE CASE STUDY

Gary scored a Moderate on his risk profile questionnaire. He is currently bullish on the market and willing to be more aggressive, but his portfolio just does not have the ability to take all the volatility of equities and still meet his goals. A structured note such as a Buffered Return Enhancement Note (BREN) might allow him to participate meaningfully in any bull market move, while mitigating some of the market risk.

The table below provides an estimate of historical performance using the terms of the BREN from page 12 to the S&P 500 with dividends re-invested (Figure 20).

**Figure 20. Performance Table of BREN for Illustration Purposes**

2000-2018 (2 Year Periods)	Average Return	Risk (Standard Deviation)	Maximum Drawdown	Return:Risk Ratio	Frequency of Outperformance
BREN Note	13.08%	18.60%	-26.32%	.74	72.22%
S&P 500 Total Return (w/Dividends Re-Invested)	14.53%	25.76%	-33.07%	.56	27.78%

Table data reflects 2 year calendar year point to point observations. The BREN uses the S&P 500 price return. Return:Risk Ratio is the Average Return divided by the Standard Deviation.

### **Advisor Notes:**

The BREN allowed an investor to participate meaningfully in the overall market uptrend while mitigating some of the market risk. The buffer allowed the BREN to outperform in all down periods. An important attribute of structured notes is that the defined outcome structure allows them to do what they say they will do.

An interesting surprise was that the BREN outperformed the index on 72% of the observations (13/18). So, despite the S&P 500 slightly outperforming overall, the frequency of out-performance actually favored the BREN over multiple measurement periods.

The S&P 500 exceeded the cap return in 5 (28%) of the observations. The S&P 500 Index declined in 5 other observations and in all 5 the BREN outperformed it. The leverage factor boosted the investor's return on 8 (44%) of the observations.

BRENS and other types of growth notes seem well suited for tactical allocation strategies or active satellite tilts

### CONCLUSION

Although structured notes have been gaining popularity in recent years, very little comprehensive material designed specifically for financial advisors and retail investors has been created. This caused a certain gap in the utilization of these products by those for whom they are specifically designed. This paper extends the current research conducted on structured notes and provides an investment framework for thoughtful portfolio implementation. More specifically, structured notes provide features that other financial instruments are not able to provide. As we have illustrated, structured notes can be useful additions to most investors' portfolios, sitting alongside other investments such as stocks, bonds and mutual funds to help balance and diversify their investment portfolio. We think that, after conducting research for this paper, structured notes can play a meaningful role in portfolio construction.

### ABOUT THE AUTHORS

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Mark is the Chief Investment Officer of Brookstone Capital Management, where he provides strategic leadership to a national investment platform serving more than 300 advisors and overseeing assets exceeding \$2.7 billion. In this role, he heads the firm's Investment Committee and drives the firm's investment allocation framework. Mark has been instrumental in leveraging resources to establish a dynamic open-architecture platform and has led the development of a successful suite of model portfolio strategies. Mark directs research on external managers and the development of internal strategies. He produces and presents content for advisor training sessions and the firm's ongoing market commentary. Mark is often requested to be the keynote speaker at advisor events throughout the country. Prior to joining Brookstone, Mark was responsible for launching and running a boutique investment management subsidiary of a publicly traded regional bank holding company. Mark has 20 years investment industry experience, including 8 years as a Chief Investment Officer. Mark received his MBA from Benedictine University. He is a Chartered Financial Analyst (CFA®), member of the CFA® Institute and CFA® Institute of Chicago.

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Alexander is an Investment Analyst at Brookstone Capital Management where he is responsible for covering the structured note universe. In this role, he searches, organizes, and evaluates multiple sources of data and information. He is instrumental in providing fundamental structured note research that includes a variety of financial derivative related analysis. Alexander also plays an active role in a number of research-related initiatives on other financial instruments such as individual stocks, mutual funds, and exchange traded funds (ETFs). He has contributed to a number of research notes on a variety of subjects. He has extensive cross-industry experience spanning financial services, technology, real estate, and insurance. Alexander received his MBA from the University of Chicago Booth School of Business. He has passed all three levels of the CFA® Program.

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### CONSIDERATIONS & RISK

**Complexity** - Investors should take time to fully understand the manner in which the return on a structured note is calculated. The investor should understand the reference asset(s) or index(es) and determine how the note's payoff structure incorporates such reference asset(s) or index(es) in calculating the note's performance. This payoff calculation may include leverage multiplied on the performance of the reference asset or index, protection from losses should the reference asset or index produce negative returns, and fees.

**Market risk** - Some structured notes provide for the repayment of principal at maturity, which is often referred to as "principal protection." This principal protection is subject to the credit risk of the issuing financial institution. Many structured notes do not offer this feature. For structured notes that do not offer principal protection, the performance of the linked asset or index may cause you to lose some, or all, of your principal. Depending on the nature of the linked asset or index, the market risk of the structured note may include changes in equity or commodity prices, changes in interest rates or foreign exchange rates, or market volatility.

**Issuance price and note value** - The price investors pay for a structured note at issuance will likely be higher than the fair value of the structured note on the date of issuance. Issuers now disclose an estimated value of the structured note on the cover page of the offering prospectus, allowing investors to gauge the difference between the issuer's estimated value of the note and the issuance price. The estimated value of the notes is likely lower than the issuance price of the note to investors because issuers include the costs for selling, structuring or hedging the exposure on the note in the initial price of their notes. After issuance, structured notes may not be re-sold on a daily basis and thus may be difficult to value given their complexity.

**Liquidity** - Investor ability to trade or sell structured notes in a secondary market is often very limited as structured notes are not listed for trading on security exchanges. As a result, the only potential buyer for structured notes may be the issuing financial institution's broker-dealer affiliate or the broker-dealer distributor of the structured note. In addition, issuers often specifically disclaim their intention to repurchase or make markets in the notes they issue. Investors should, therefore, be prepared to hold a structured note to its maturity date, or risk selling the note at a discount to its value at the time of sale.

**Credit risk** - Structured notes are unsecured debt obligations of the issuer, meaning that the issuer is obligated to make payments on the notes as promised. These promises, including any principal protection, are only as good as the financial health of the structured note issuer. If the structured note issuer defaults on these obligations, investors may lose some, or all, of the principal amount they invested in the structured notes as well as any other payments that may be due on the structured notes.

**Call risk** - Some structured notes have "call provisions" that allow the issuer, at its sole discretion, to redeem the note before it matures at a price that may be above, below or equal to the face value of the structured note. If the issuer "calls" the structured note, investors may not be able to reinvest their money at the same rate of return provided by the structured note that the issuer redeemed.

**Tax considerations** - The tax treatment of structured notes is complicated and, in some cases, uncertain. Before purchasing any structured note, you may wish to consult with a tax advisor. You also should read the applicable tax risk disclosures in the prospectuses and other offering documents of any structured note you are considering purchasing.

## DISCLOSURE

The data and analysis contained herein are provided “as is” and without warranty of any kind, either expressed or implied.

### IMPORTANT RISK INFORMATION

A purchaser should evaluate and understand all of the risks and costs of an investment in Structured Notes (SNs) prior to making any investment decision. A purchase of an SN entails other risks not associated with an investment in conventional bank deposits. A purchaser may not have a right to withdraw his/her investment prior to maturity or could incur substantial penalties for an early withdrawal, if permitted. A purchaser should carefully read the disclosure statement and any other disclosure documents for a SN before investing.

An investment in SNs is not FDIC insured and is subject to credit risk. The actual or perceived creditworthiness of the note issuer may affect the market value of SNs. SNs will not be listed on any securities exchange. Even if there is a secondary market, it may not provide enough liquidity to allow purchasers to trade or sell SNs. As a holder of SNs, purchasers will not have voting rights or rights to receive cash dividends or other distributions or other rights in the underlying assets or components of the underlying assets. Certain built-in costs are likely to adversely affect the value of SNs prior to maturity. The price, if any, at which the notes can be purchased in secondary market transactions, if at all, will likely be lower than the original issue price and any sale prior to the maturity date could result in a substantial loss. SNs are not designed to be short-term trading instruments. Purchasers should be willing to hold any notes to maturity. The tax consequences of SNs may be uncertain. Purchasers should consult their tax adviser regarding the U.S. federal income tax consequences of an investment in SNs. If a SN is callable at the option of the issuer and the SN is called, the holder will receive only the applicable redemption amount and will not receive any coupon payments that would have been payable for the remainder of the term of the SN. SNs are Not FDIC Insured, May Lose Principal Value and are Not Bank Guaranteed.

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For a complete description of investment risks, fees and services review the Brookstone Capital Management firm brochure(ADV Part 2) which is available from your Investment Advisor Representative or by contacting Brookstone Capital Management

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