BERNSTEIN

REACHING THE SUMMIT: PLANNING AROUND AN IPO

"The market for initial public offerings (IPOs) has been soaring to new heights. The $156 billion raised on U.S. exchanges during 2020 exceeded the previous three years combined.[1] Plus, companies took advantage of new ways to tap public markets—including direct listings and special purpose acquisition companies (SPACs), which represented around 50% of IPO volume last year.[2]

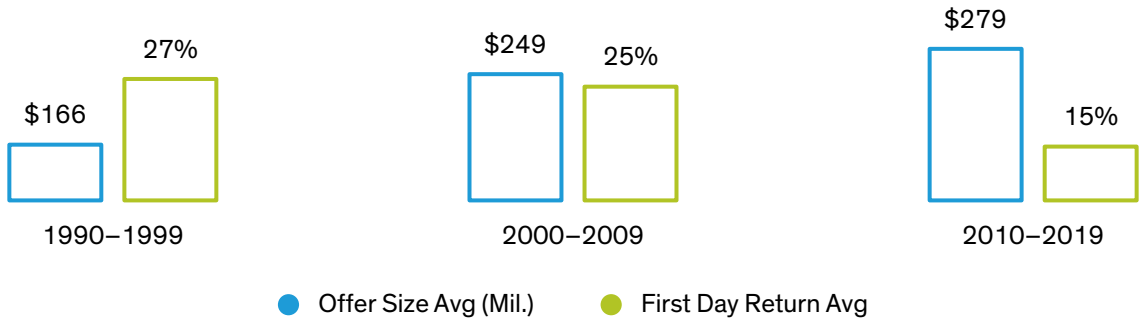
Having guided many founders, executives, and shareholders along the path from private company to public, we recognize that for early shareholders, an IPO can lead to tremendous wealth. Google, for example, rose 18% on its first day of trading back in 2004. And it's not alone. Since 1990, companies that have gone public have averaged a comparable first-day bump of 21.5%.[3] Many haven't stopped there. For instance, Google has gone on to reward shareholders with returns averaging 25.5% per year through 2020.

Yet while headlines often tout the big IPO winners, not all companies enjoy instant success. In recent decades, the average first day uptick for companies going public has dwindled as firms delay their public debut and increase the dollar value of their initial offer size. In the 1990s, stock prices climbed an average of 27% from the initial offer price on day one, whereas US IPO investors gained roughly half of that on average in the 2010s (**Display 1**).

DISPLAY 1: AS IPO SIZE INCREASED, POST-IPO PERFORMANCE TRENDED LOWER

Average Day 1 Return of IPO Stocks (1990–2019): 21.5%

Average IPO Offer Size and First Day Return By Decade



As of December 31, 2019.
Past performance is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.
The analysis excludes special purpose acquisition companies (SPACs), closed-end funds, investment companies, deals categorized as regulation S or rule 144, offer sizes less than $50 million and companies in which first trade day pricing data is not available.
Average first day return represents the offer-size-weighted average of the returns for all US companies that underwent an initial public offering during the respective decade. Decade start and end dates are as of December 31.
Source: Bloomberg and AB

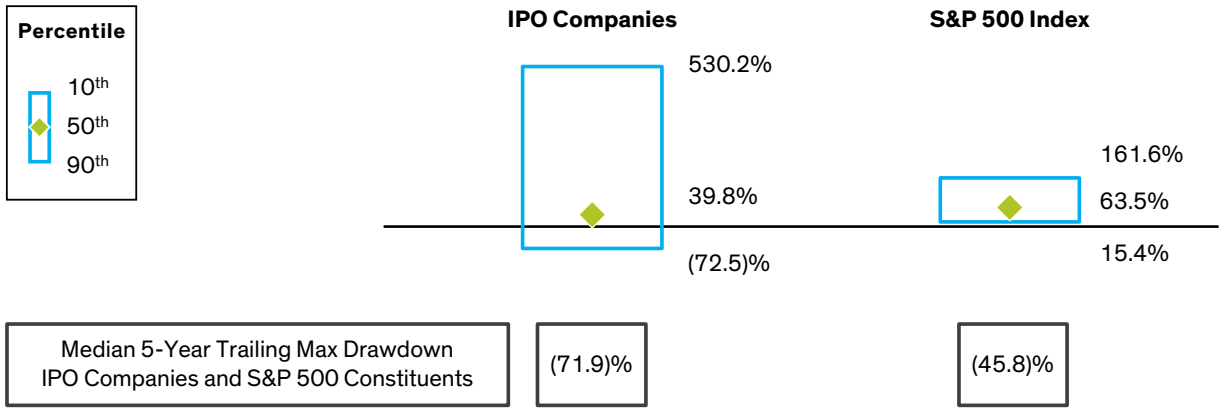
IPO STOCKS ARE MORE VOLATILE

IPOs offer the potential for a windfall, but investors must be prepared to withstand the uncertainty. We compared the returns of a representative universe of companies that underwent a traditional initial public offering in the last 10 years[4] to the returns of the S&P 500 stock index over the same periods (using the first trade date of each IPO stock through December 31, 2020). The range of returns for the IPO universe varied widely, with the median cumulative price performance reaching 39.8% (**Display 2**). By comparison, investors could expect a much smaller dispersion of returns from investing in the S&P 500—and at 63.5%, the median cumulative return was nearly 60% higher.

Then there's risk. To gauge the downside, we also compared the maximum drawdowns of the representative universe of IPO stocks to all companies in the S&P 500 during the last five years. The (72%) median drawdown for IPO stocks eclipsed the (46%) median drawdown of S&P 500 constituents. Interestingly, the single largest drawdown in the S&P 500 Index was only (33.8%). This underscores the inherent risk of too much exposure to any single stock, especially for investors in a newly listed company relative to owners of mature, large-cap holdings.

DISPLAY 2: HOLDING SHARES AFTER AN IPO FOR LONG PERIODS MAY RESULT IN A WIDE RANGE OF RETURNS

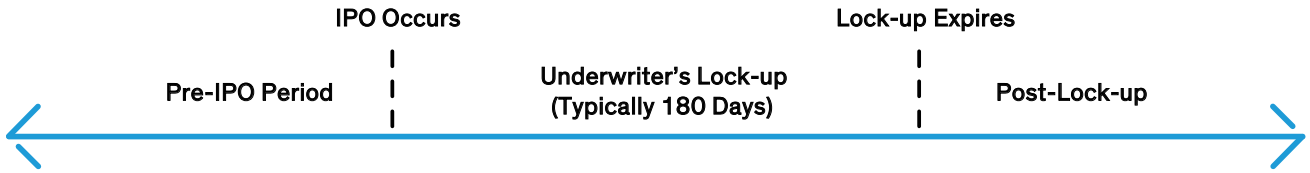
Dispersion of Cumulative Price Returns for IPO Companies over Last 10 Years
From First Trade Date Through December 31, 2020



As of December 31, 2020.
Past performance is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.
The universe of IPO companies includes companies that underwent an initial public offering during the trailing 10-year period between January 1, 2011 and December 31, 2020, excluding special purpose acquisition companies (SPACs), closed-end funds, investment companies, deals categorized as regulation S or rule 144, offer sizes less than $50 million and companies for which pricing data is no longer available or trade date data is not available. S&P 500 return dispersion represents the range of returns that corresponds to the same start and end dates as the companies included in the IPO universe. In other words, it represents the range of returns if the S&P 500 index was owned in place of the IPO shares.
Median 5-year trailing max drawdown is based on the period January 1, 2016 to December 31, 2020. IPO universe is the same as the return dispersion. S&P 500 max drawdown represents the median max drawdown of S&P 500 index constituents. The constituent selection is as of December 31, 2015.
Source: Standard and Poor's, Bloomberg, and AB

Clearly, the stakes are high for founders, investors, and employees of pre-IPO companies. Decisions made before and after the IPO may ultimately mean the difference between success and failure in meeting investors' goals. Fortunately, thoughtful planning can help pre-IPO shareholders tilt the odds in their favor. Bernstein can help answer the critical questions that arise all along the IPO timeline (**Display 3**).

DISPLAY 3: IMPORTANT QUESTIONS ALL ALONG THE IPO TIME LINE



Pre-IPO Period

- How much core capital will I need to secure my financial future?
- What estate planning strategies should I consider?
- Should I exercise my options early?
- Do I hold Qualified Small Business Stock?
- What if I need liquidity before the IPO?

Underwriter's Lock-up (Typically 180 Days)

- How do I manage single stock exposure?
- Should I consider a 10(b)5-1 plan to begin trading after the lock-up?

Post-Lock-up

- What about restrictions and blackouts?
- How can I benefit the charities I care about?
- How should I invest my diversified portfolio?
- Have I communicated the purpose and vision for the wealth with my family?
- Are my heirs prepared to be good stewards of the wealth?

CASE STUDY: MEET THE REMEDYS

Consider Heath and Cara Remedy—a 45-year-old couple living in a high-tax state, with two children, ages 10 and 12. Cara co-founded a private, healthcare-related company that expects to go public in the next few years. She remains a senior executive, earning $400,000 per year in salary and a $200,000 annual bonus, plus anticipated equity-based compensation of approximately $400,000 of restricted stock units (RSUs) and $400,000 of non-qualified stock options (NQSOs), each vesting equally over four years.

Since founding the company in 2012, the Remedys have accumulated a 3% ownership stake worth $48.5 million before taxes. This assumes an expected IPO price of $25 per share—a significant increase from the last independent valuation of $10 per share during the last funding round.[5] This exposure (**Display 4**) dwarfs their relatively modest diversified liquid portfolio of $3.5 million.

DISPLAY 4: CASE STUDY: SUMMARY OF STOCK HOLDINGS

Expected IPO Stock Price = $25.00

Non Qualified Stock Options

Shares	Exercise Price	Expiration	Vesting Schedule	Pretax Value	After-tax Value
250,000	$1.50	9/30/2025	Vested	$5,875,000	$2,802,000
250,000	$3.13	3/30/2026	Vested	$5,467,500	$2,608,000
150,000	$8.33	3/30/2028	75K vested, remaining vest over 2 years	$2,500,500	$1,193,000
171,000	$10.00	9/9/2029	Evenly over 4 years	$2,565,000	$1,222,000
821,000				**$16,408,000**	**$7,825,000**

Incentive Stock Options

Shares	Exercise Price	Expiration	Vesting Schedule	Pretax Value	After-tax Value*
300,000	$0.42	1/31/2024	Vested	$7,374,000	$3,515,000
300,000				**$7,374,000**	**$3,515,000**

Direct Holdings—Long-Term

Shares	Cost Basis		Pretax Value	After-tax Value
100,000	$0.42	From ISO Exercise	$2,500,000	$1,600,000
800,000	$0.00		$20,000,000	$12,681,000
900,000			**$22,500,000**	**$14,281,000**

Restricted Stock Units

Shares	Vesting Schedule	Pretax Value	After-tax Value
90,000	Evenly over 4 years	$2,250,000	$1,072,000
90,000		**$2,250,000**	**$1,072,000**

Total	**$48,532,000**	**$26,693,000**

*After-tax value of Incentive Stock Options assumes shares are sold in a disqualifying disposition.

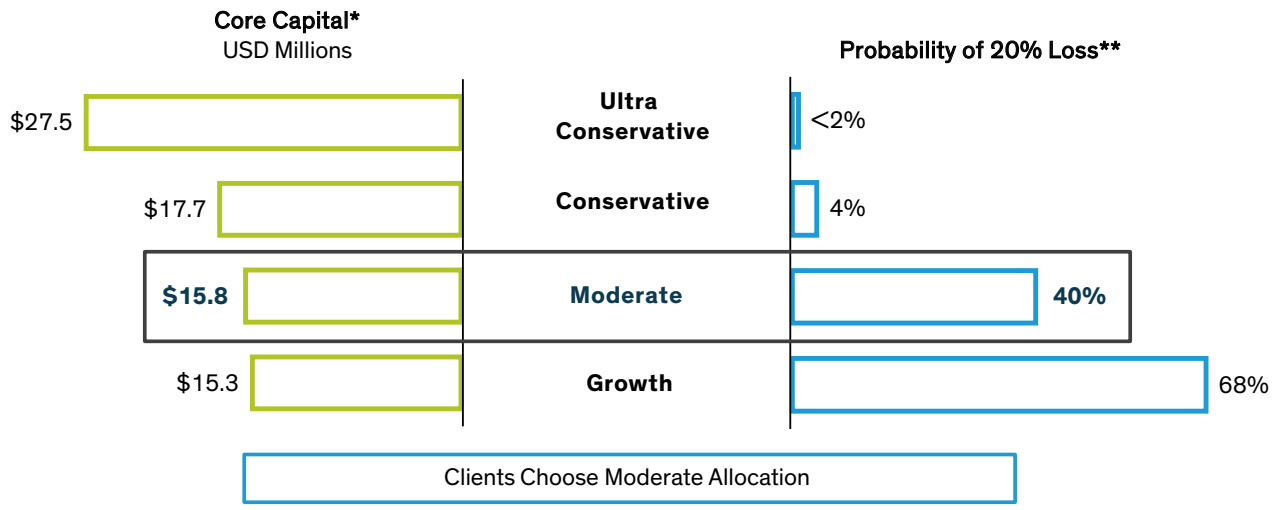
Cara has no plans to retire, but she would like the flexibility to stop working in five years. Either way, she wants to ensure that she and her family have a high probability of supporting their spending goals of $400,000 per year (inflation-adjusted).

STEP 1: DETERMINING CORE CAPITAL

To address these goals, we must first quantify Cara and Heath's core capital requirement. This is the nest egg of diversified assets they'll need to accumulate to sustain their lifestyle—grown with inflation—for the rest of their lives with a high level of confidence. Using our proprietary Wealth Forecasting System, we calculate core capital to withstand high inflation and challenging market conditions for the next 50 years.

The amount of core capital required varies based on asset allocation. For instance, if the Remedys opt to invest a diversified portfolio entirely in intermediate duration bonds, they would need $27.5 million to secure their spending. Adding stocks reduces the amount of core capital required, provided Cara and Heath can withstand higher volatility (**Display 5**). Ultimately, they felt comfortable choosing a moderate allocation of 50% Stocks/12% Alternatives/3% Real Assets/35% Bonds, and the $15.8 million required core capital generated by it.

DISPLAY 5: GROWTH-ORIENTED ALLOCATIONS REDUCE CORE CAPITAL BUT INCREASE RISK



*Core capital is defined as the amount of diversified assets required to support annual, inflation-adjusted spending of $400,000 offset by Cara's inflation adjusted salary and bonus totaling $600,000 through 2024 with a 90% level of confidence over the next 50 years. Does not account for the potential value of future grants of RSUs and stock options. Ultra Conservative represents 100% bonds; Conservative represents 28% global stocks, 7% alternatives, and 65% bonds; Moderate represents 50% global stocks, 12% alternatives, 3% real assets, and 35% bonds; Growth represents 64% global stocks, 14% alternatives, 5% real assets, and 17% bonds.**Projections indicate the probability of a peak-to-trough decline in pretax, pre-cash-flow cumulative returns of 20% over the next 30 years. Because the Wealth Forecasting System uses annual capital-market returns, the probability of peak-to-trough losses measured on a more frequent basis (such as daily or monthly) may be understated. The probabilities depicted above include an upward adjustment intended to account for the incidence of peak-to-trough losses that do not last an exact number of years. Based on AB's estimates of the range of returns for the applicable capital markets over the periods analyzed. Data do not represent past performance and are not a promise of actual future results or a range of future results. See Notes on the Wealth Forecasting System in the appendix for further details.

Core capital paves the way for a pre-IPO shareholder to make two critical decisions. First, as a nest egg ensuring financial independence, core capital represents a target for future diversification. It is a long-term bogey for the value of the diversified portfolio that doesn't need to be reached overnight. Second, core capital can dimension capacity for pre-IPO legacy planning. Assets exceeding core capital represent the shareholder's "surplus capital." These are funds available for major purchases, new ventures, or aspirations for children and charity.

PRE-IPO ESTATE PLANNING

What does this mean for our couple? At the expected IPO price of $25 per share, Cara and Heath would have over $14.0 million of surplus capital. And though they have yet to secure their core capital, the time leading up to an IPO presents a unique window for estate planning. Shareholders transferring company stock to trusts for the benefit of their heirs can take advantage of pre-IPO valuations and significantly reduce estate taxes down the road.

The family's estate planning attorney has recommended a two-year grantor retained annuity trust (GRAT) funded with privately held shares prior to the IPO. GRATs allow grantors to fund a portfolio for the benefit of their descendants, in exchange for a series of annuity payments for the term of the trust. Provided the present value of the payments roughly equals the value of the assets contributed, there is little or no taxable gift upon funding the GRAT. At the end of the trust term, any remaining funds (after all annuity payments have been satisfied) are transferred to the descendants free of transfer tax. Currently, the interest rate used to determine the annuity payments sits near its all-time low. This works to the Remedys' advantage as lower rates reduce the required annuity payments while increasing the chances that there will be something left over for their heirs.

While a GRAT can be funded at any point in time, funding the trust with privately held stock prior to the IPO (when the private stock valuation is typically low) has a material impact. The GRAT freezes the amount of wealth to be returned to the grantor at the contribution value plus modest interest payments. That means all future growth potential pre- and post-IPO can be moved to the next generation, super charging the strategy's success. On the other hand, if the shares fail to appreciate, the grantor receives all the shares back and remains no worse-off for having created the GRAT.

However, shareholders like the Remedys face a crucial choice: How much stock should they contribute to the GRAT? They expect the stock to be worth much more at IPO, but at the most recent $10 per share valuation,

their assets only total $13.0 million after taxes. That's $2.8 million below their core requirement. The family must retain a portion of the appreciation between now and the IPO on their balance sheet to reach core capital, and reserve for the taxes owed when shares are eventually sold inside and outside the GRAT. The number of shares required to bridge the core gap depends on the future performance of the stock.

To help the family make this determination, we stress-tested funding different share amounts and IPO prices. In doing so, we aimed to compare the amount of wealth transferred tax-free versus the ability to reach core capital and pay future income taxes. The scenarios we evaluated varied from not funding a GRAT to contributing all 900,000 available shares. We assumed the shares were valued at $10/share at funding and we modeled IPO prices in the subsequent two years ranging from $10 to $25 per share.

The value of personal wealth retained on the Remedys' balance sheet after taxes—assuming all stock holdings were liquidated at the end of the GRAT term and taxes were paid by the grantor—varied between $13 million and $30 million (**Display 6**). The shaded fields reflect combinations of GRAT funding and IPO pricing where Cara and Heath's personal after-tax wealth exceeds their core capital needs of $15.8 million.

Note that at $10 and $12 per share, the stock will not have appreciated enough to secure Cara and Heath's core needs, even without funding a GRAT. In fact, the stock price needs to increase to $12.49 per share just to secure the couple's core capital. Once the stock price exceeds this threshold, the family can afford to give away some additional appreciation. For instance, at $14 per share, the family could afford to contribute up to 60% of their directly held shares to fund a GRAT. At $25 per share, they could put in up to 100%, and still reach their core capital from their options, RSUs, and existing liquid assets.

DISPLAY 6: GRAT FUNDING DEPENDS ON ABILITY TO SECURE CORE NEEDS

Core Capital: $15.8M

Personal Wealth after GRAT Termination
USD Millions

IPO Price	% of Stock Used in GRAT Funding					
	No GRAT	20%	40%	60%	80%	100%
$10.00	$13.0	$13.0	$13.0	$13.0	$13.0	$13.0
$12.00	$15.2	$15.0	$14.7	$14.5	$14.2	$14.0
$14.00	$17.5	$17.0	$16.4	$15.9	$15.4	$14.8
$16.00	$19.8	$19.0	$18.1	$17.3	$16.5	$15.7
$20.00	$24.4	$22.9	$21.5	$20.1	$18.7	$17.3
$25.00	$30.0	$27.9	$25.7	$23.6	$21.4	$19.3

*Personal Wealth after GRAT Termination includes $3.5 million of existing diversified assets (assuming no growth over the two-year period), plus the value of retained company stock and any shares returned through the GRAT. Assumes that all imbedded gain in the company stock holdings is taxed at a blended rate of 36.6% at the end of GRAT term and paid by the grantor. Stock price is assumed to appreciate linearly between GRAT funding and the IPO. Ignores future grants of stock options and RSUs.

Like many pre-IPO shareholders, the Remedys feel bullish about the company's future and are willing to transfer some of the upside potential. Not knowing which direction the stock price will go, Cara and Heath decide to conservatively plan for a $16 IPO price and contribute no more than 40% of their shares to the GRAT. At that level, they will retain $18.1 million in assets and transfer $1.6 million to a trust for the benefit of their children. That leaves the Remedys more than enough to secure their core capital with surplus to cover the ongoing income tax obligation on behalf of the children's trust.

If the stock exceeds their expectations, more wealth will be transferred to their children, but they will still be well positioned should the stock price disappoint. If the Remedys want even more protection from giving away too much pre-IPO stock, they could name a Spousal Lifetime Access Trust (SLAT) as beneficiary of the GRAT. This would provide the grantor's spouse with access to funds if needed, even though the trust remains outside the grantor's estate.

PRE-IPO OPTION EXERCISE

Stock options can be a tremendous tool for wealth building, but exercising options after a successful IPO tends to trigger hefty taxes. Option holders who proactively exercise at lower valuations may meaningfully reduce their tax obligations—if they are willing to accept the risks. In some cases, it may even be worth "early exercising" an option before it vests (if the company allows it).

Exercising an employee stock option comes with two costs. The option holder must pay the strike price to acquire the stock, as well as the taxes incurred upon exercise. When exercising nonqualified stock options, the difference between the option strike price and the fair market value of the stock at the time of exercise is taxed as ordinary income.

When exercising incentive stock options (ISOs), the difference between the option strike price and the fair market value of the stock at the time of exercise is subject to alternative minimum tax (AMT). If the stock price appreciates enough prior to ISO exercise, the sizable AMT bill often makes exercising and holding impractical. A likely outcome is the exercise and immediate sale of the stock, known as "disqualification" of the ISO, which results in ordinary income tax.

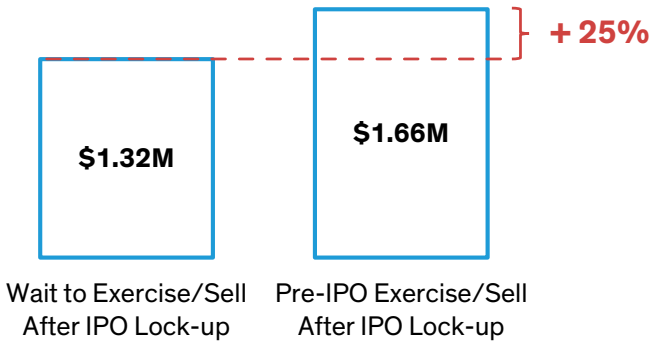
In contrast, exercising an option at the lower pre-IPO valuation can reduce the amount of tax due at exercise and converts future appreciation into long-term capital gain taxed at preferential rates. When the stock is eventually sold, the taxpayer potentially saves the difference between these two tax rates. How have the Remedys played their hand? The couple holds 100,000 shares of mature ISO stock which they exercised four years ago. Let's turn back the clock to revisit the decision.

At the time, Cara exercised and held 100,000 ISOs with a strike price of $0.42 while the stock price stood at $2.50. If she had waited until after the IPO lock-up to exercise and sell at $25 per share, she would have netted $1.17 million after tax. But that isn't the whole story. The initial cost of exercising early and holding was $114,072. Assuming this money earned 5% for six years, it would have grown to $152,867. In holding off, Cara would have netted the $1.17 million in option proceeds plus saved the $152,867 reinvested cost, for a total of $1.32 million (**Display 7**).

However, by exercising early when the valuation was only $2.50—then holding until after the IPO lock-up and selling at $25—Cara will net $1.66 million of sale proceeds. At the projected sale price, Cara's decision to exercise at $2.50 will generate $331,524 of additional wealth, a 25% increase.

DISPLAY 7: EXERCISING OPTIONS CAN SHIFT MORE OF THE TAX BURDEN FROM COSTLY ORDINARY INCOME TAXES TO PREFERENTIAL CAPITAL GAINS

After-Tax Proceeds from Exercise of 100,000 ISOs
$0.42 Strike Price | $2.50 Stock Price | $25 Sale Price



Benefits

- Exercising when the bargain element is small can reduce the ordinary income tax liability
- If ISOs are vested, exercise starts the holding period clock for potential long-term capital gains and QSBS treatment

Drawbacks

- Requires acceleration of tax bill and out-of-pocket exercise cost
- Opportunity cost of total exercise cost if stock doesn't appreciate

For illustrative purposes only. Numbers may not sum due to rounding. *Assumes a federal and state income tax rate of 52.3% applies to the intrinsic value of the options in the "Wait to Exercise" scenarios and assumes a 34.7% AMT rate applies to option income and any long-term gain is taxed at a combined rate of 36.6% in the "Pre-IPO Exercise" scenario. Assumes that in the "Wait to Exercise" scenario, the $114,072 that would have otherwise been spent to exercise the options is invested in a portfolio earning an after-tax return of 5% for six years.
Bernstein is not a tax advisor; please consult your tax advisor prior to making any tax related investment decisions.

While the tax savings seem compelling, we must account for the risk that the stock doesn't appreciate after exercise. How much does the stock need to appreciate to justify the risk? In this case, not much. As long as the stock increases to $3.94 per share, the preferential tax treatment upon sale outweighs the cost to exercise.

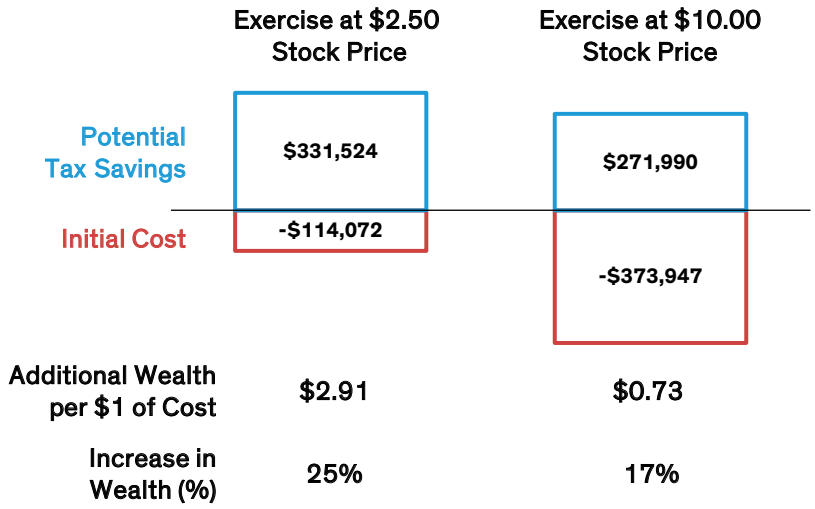
Cara and Heath remained highly confident that the stock would rise above $3.94 per share, but they wanted to understand the potential concession in the event of a worst-case scenario. If they exercised and the stock unexpectedly declined, the family could have been out the $114,072 to exercise those options. Ultimately, option holders should be careful not to commit more capital than they can afford to lose. In this case, the family felt that the chance of a worst-case scenario was low and the possible income tax savings offset the potential opportunity costs, so they proceeded with an early exercise of 100,000 options.

Now Cara wonders whether she should repeat the strategy. She's considering exercising another 100,000 of incentive stock options with the $0.42 strike price—but this time, at the current Section 409A valuation of $10 per share. She could wait two years until the IPO to exercise, when she'd have an opportunity for liquidity. Or, she could exercise and hold today. While there is no liquid market for the stock, there's potentially more favorable tax implications for the future.

If Cara exercises today instead of waiting until after the IPO lock-up to exercise and selling when the stock is trading at $25 per share, she could save a potential $271,990 in taxes. However, the $373,947 price tag associated with exercising today is steep in light of the potential tax savings down the road. Exercising at today's higher valuation represents a much less attractive tradeoff (**Display 8**).

DISPLAY 8: EXERCISING OPTIONS WHEN THE VALUATION IS LOW MAXIMIZES POTENTIAL TAX SAVINGS, BUT RISK OF LOSING INVESTMENT MAY BE HIGHER

Benefit and Cost from Pre-IPO Exercise of 100,000 ISO Exercise | Sale at $25.00



Maximizing the Tax Benefits

- **Capture More Cap Gains Treatment.** ISOs may qualify for long-term capital gains treatment on all appreciation above the strike price if held for more than two years from grant and one year from exercise.**
- **Mind the AMT Credit.** You may be able to apply AMT taxes paid upon exercise against future stock sales.
- **Opportunity for QSBS Gain Exclusion.** If stock is held for at least five years from exercise, it may qualify for the QSBS federal capital gains tax exclusion.**
- **Don't forget!** File the 83b form within 30 days if you exercise unvested options.

Assumes a federal and state income tax rate of 52.3% applies to the intrinsic value of the options in the "Wait to Exercise" scenarios and assumes a 34.7% AMT rate applies to option income and any long-term gain is taxed at a combined rate of 36.6% in the "Pre-IPO Exercise" scenario. Assumes that in the "Wait to Exercise" scenario, the cost that would have otherwise been spent to exercise the options is invested in a portfolio earning an after-tax return of 5% for six years in the first scenario and for two years in the second scenario. For illustrative purposes only. Numbers may not sum due to rounding.
**There may be significant tax differences between early exercising an incentive stock option (ISO) versus a non-statutory option (NSO). For unvested ISOs that are converted to NSOs and then early exercised, the clock for QSBS and long-term gain treatment begins upon exercise and timely 83(b) election. For unvested ISOs that are early exercised without prior conversion to NSOs, the clock for QSBS and long-term gain treatment begins upon vesting, rather than exercise and timely 83(b) election.
Bernstein is not a tax advisor; please consult your tax advisor prior to making any tax related investment decisions.

DIVERSIFYING THE SINGLE STOCK RISK

For most pre-IPO shareholders, the IPO itself is not a liquidity event. Shareholders and employees are typically subject to a 180-day lock-up during which they may not hedge or sell. Before the lock-up ends, shareholders should devise a post-lock-up diversification plan detailing appropriate sale amounts and timing, while outlining which shares or options to divest first.

But where should they start? Based on our research, we offered the Remedys a road map for the optimal order of divestment for their concentrated stock and options holdings, allowing them to sell at the lowest cost (**Display 9**).

DISPLAY 9: A COST-EFFICIENT FORMULA FOR BUILDING CORE CAPITAL

For Optimal Results, Mrs. Remedy Should Divest in Order of Cost of Selling

○ Stock held at a loss	✓ Tax losses can be used against gains
○ Stock held in tax-deferred accounts	✓ No tax cost
○ Sell all restricted stock as it vests	✓ No additional tax cost to sell
○ Stock options with a time value of less than 30% of total value	✓ Near-optimal risk-adjusted return
○ Stock held at a profit, in order of lowest capital gain	✓ Can keep tax cost as low as possible

Source: AllianceBernstein

For directly held stock positions, we measured cost based on the amount of taxes incurred, if any. Generally, stocks held at a capital loss are a natural first choice, as those losses can be used to offset realized gains. That's followed by any company stock held in tax-deferred retirement accounts. And we recommended that the Remedys dispose of each restricted stock position as it vests.

SECONDARY SALES OF PRIVATE COMPANY STOCK

Though Cara and Heath are willing to wait to sell company stock, some shareholders have more urgent liquidity needs. As the timeline for companies to reach a liquidity event has lengthened, the sale of private company shares on the secondary market has grown increasingly popular. Doing so allows shareholders and employees to gain liquidity prior to a company acquisition or IPO. Matching websites connect buyers with sellers who may need liquidity to buy a home, pay college tuition, or exercise options. While a secondary sale creates liquidity and improves diversification, before pursuing, shareholders should:

- Work with a tax advisor to consider QSBS holding requirements, timing considerations for stock options, and taxes due upon exercise.
- Determine what type of company cooperation is required. Many companies have the right to buy the stock back from shareholders through a "Right of First Refusal" (ROFR). They may also limit company information to the buyer.
- Communicate with the board and other shareholders. Open dialogue can help avoid any potential negative signaling that may be associated with early stock sales.
- Implement a plan well in advance of the sale. Quantify the amount of liquidity required and balance cash needs with the optics surrounding an early sale. Planning can also crystallize the trade-off between the current sale price versus expected future value, helping avoid forfeiture of significant "upside" potential.

A secondary sale can be complex. Shareholders must understand the specifics of their company's shares and any investor rights agreements before committing to a sale of shares.

We ranked stock options next, due to their finite lifespan. Not surprisingly, options close to expiration make excellent candidates for divesting. For the remaining, we looked to exercise those with the least upside potential. How did we determine that? We divided the stock option's value into its two component parts: "intrinsic value" and "time value." Intrinsic value is the amount the option is in-the-money—the difference between its exercise price and the underlying share's current price. Even if the option is "out-of-the-money," it isn't worthless. Time value captures the opportunity for the underlying stock to appreciate before the option expires. Time value declines as an option ages and as the stock price appreciates. Our research shows that the optimal time to exercise stock options when building core capital is when their time value declines to 30% or less of their total value.

The last holdings rounding out the list were appreciated stock positions held in taxable accounts. In most cases, prioritizing lots with the highest cost basis helps keep the tax bill down. The lowest basis holdings can be reserved for future philanthropic giving, or tax-deferral strategies like Exchange Funds.

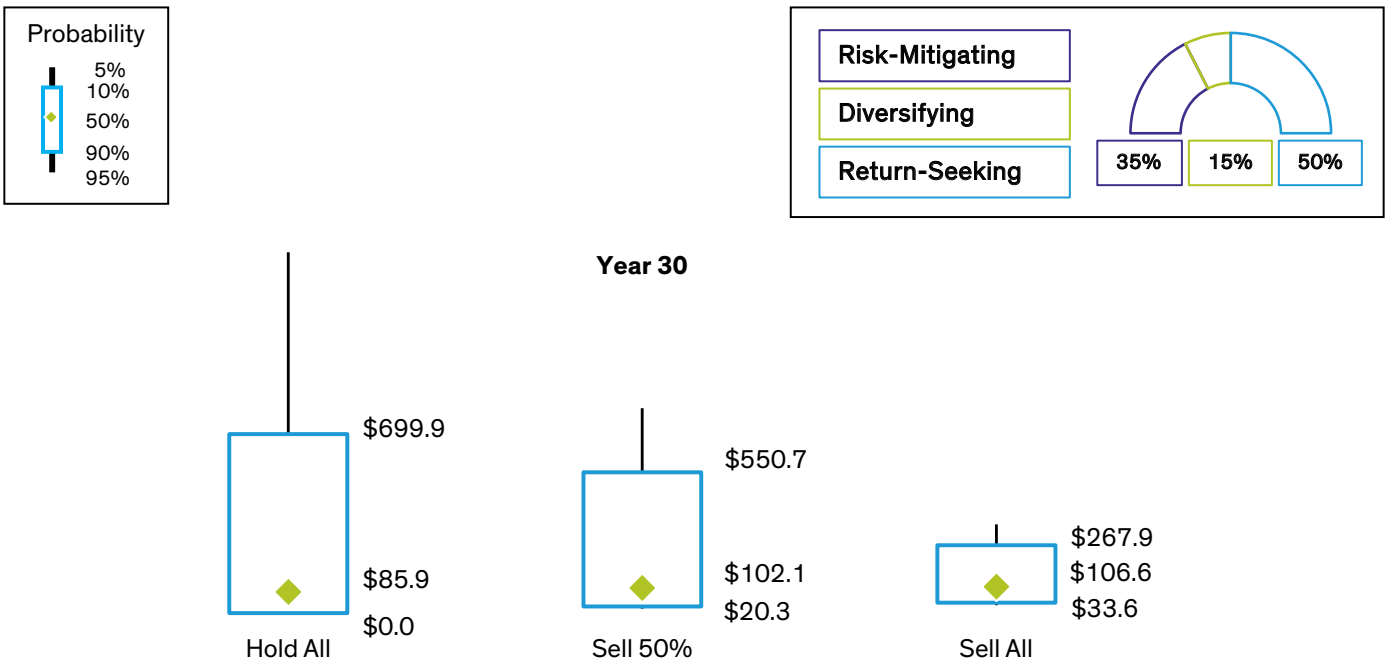
While Cara and Heath's core capital requirement of $15.8 million represents a critical diversification target, they wondered if they should sell even more shares over time. To assess the benefit of post-lock-up diversification, we evaluated three scenarios:

- "**Hold All**" assumes Cara and Heath hold all shares and RSUs after they vest, then wait until expiration to exercise and liquidate the options.
- "**Sell 50%**" assumes the couple sells half their overall exposure by exercising all options when their time value is less than 30% of their total value then selling the underlying stock, diversifying all RSUs upon vesting, and liquidating 100,000 shares evenly over five years. Remaining shares are held unless needed to support spending.
- "**Sell All**" resembled the second plan, except instead of selling only 100,000 of the directly held shares over the next five years, 100% were sold.

We then forecasted how Cara and Heath's wealth would grow over 30 years under each scenario, assuming the after-tax proceeds from selling stock were invested in a diversified portfolio of 50% Stocks/12% Alternatives/3% Real Assets/35% Bonds (**Display 10**).

The more Cara and Heath sell, the more they reduce risk—at some sacrifice to the upside results. For example, if the Remedys were to "Sell All," their $33.6 million of downside wealth in 30 years would easily surpass the $20.3 million downside we project in the "Sell 50%" scenario. Holding all the stock resulted in the greatest upside at nearly $700 million, but the lowest median outcome of $85.9 million.

DISPLAY 10: DIVERSIFICATION IMPROVES OUTCOMES IN POOR AND TYPICAL MARKETS, BUT MAY LIMIT UPSIDE



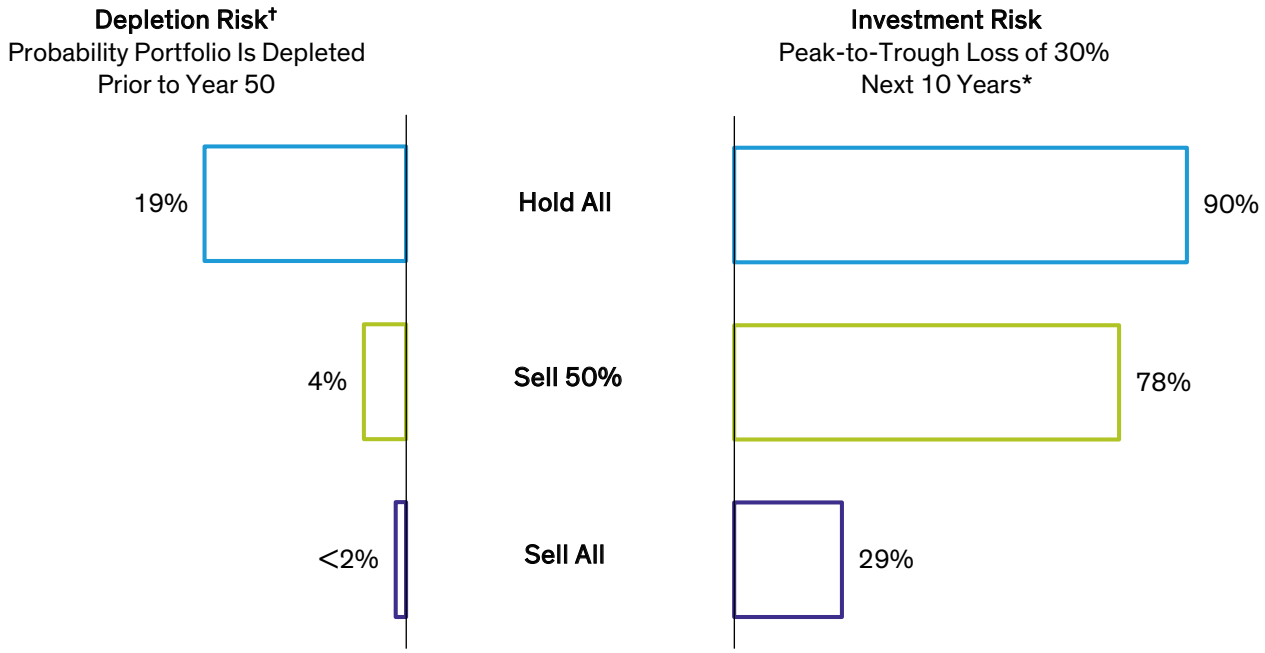
*Based on AB's estimates of the range of returns for the applicable capital market over the next 30 years. Accounts for the projected value of future RSU and stock option grants. Data do not represent past performance and are not a promise of actual future results or a range of future results. Asset values represent the estimated market value; if the assets were liquidated, additional capital gains or losses would be realized that are not reflected here. See Assumptions and Notes on Bernstein Wealth Forecasting System in the Appendix for further details.

On the other hand, holding all stock could result in Cara and Heath depleting their assets. Over the Remedys' 50-year lifespan, we project a 19% chance (close to one-in-five) that the couple could run out of money (**Display 11**).

Diversifying half their position reduces the chance of draining their portfolio to 4%. While they don't need to sell everything to secure their spending, there is a benefit to selling more. Liquidating half their company stock leaves the Remedys with a nearly four-in-five chance of experiencing a 30% decline in their portfolio value over the next decade. That risk drops substantially when Cara and Heath fully diversify their company stock position. After reviewing the results of our analysis, the Remedys decided to reduce their exposure by 50% over the next five years, commencing after the IPO lock-up release date. Given Cara's relationship to the company, she needed to put a formal selling plan in place.

Executives wishing to sell company stock face legal restrictions relating to timing, amount, and filing requirements. Further, many company insiders are prohibited from selling stock or remain "blacked out" for much of the quarter until two days after an earnings announcement. Cara faces an additional restriction—the 180-day lock-up imposed by the IPO underwriters.[6]

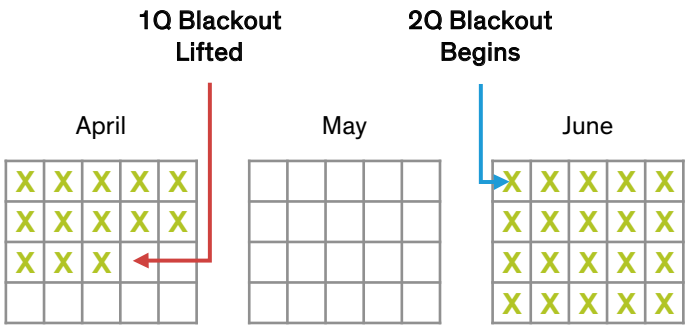
DISPLAY 11: DIVERSIFICATION REDUCES THE LIKELIHOOD OF DEPLETING THE PORTFOLIO WHILE ALSO REDUCING PORTFOLIO VOLATILITY



†Depletion risk is defined as the probability the portfolio is unable to support inflation-adjusted living expenses of $400,000 per year over the next 50 years. Accounts for the projected value of future RSU and stock option grants. Based on AB's estimates of the range of returns for the applicable capital markets over the periods analyzed. Data do not represent past performance and are not a promise of actual future results or a range of future results. Asset values represent the estimated market value; if the assets were liquidated, additional capital gains or losses would be realized that are not reflected here. See Assumptions and Notes on Bernstein Wealth Forecasting System in the Appendix for further details.*Projections indicate the probability of a peak-to-trough decline in pretax, pre-cash-flow cumulative returns of 20% over the next 10 years. Because the Wealth Forecasting System uses annual capital-markets returns, the probability of peak-to-trough losses measured on a more frequent basis (such as daily or monthly) may be understated. The probabilities depicted above include an upward adjustment intended to account for the incidence of peak-to-trough losses that do not last an exact number of years.

DISPLAY 12: TRANSITION FROM PRIVATE TO PUBLIC
Monetize Shares with a 10b5-1 Plan

- A 10b5-1 plan is a written, automatic plan for selling a specific amount of company stock over time without regard to certain blackout trading dates
- Provides an affirmative defense to insider trading claims and may reduce the "signaling effect" to the market



At a Glance

More companies are requiring executives to use 10b5-1 "automatic sale" plans

Executives face many decisions when creating a 10b5-1 plan

Bernstein has the experience and tools to create and execute a plan that meets an executive's financial goals

For illustrative purposes only.
Source: AllianceBernstein

Executives and other employees of public companies who exercise options and sell stock may be best served by a 10b5-1 automatic sale plan. A 10b5-1 plan is a written sale plan, adopted during an open window, which permits shareholders to sell company stock under the terms of the plan without regard to subsequent trading blackouts. It provides an affirmative defense against insider trading claims. And because the plan often calls for phased-in sales, the executive can diversify at a measured pace, minimizing "signals" that investors might misinterpret as doubt about their company's prospects (**Display 12**).

Most companies have guidelines for creating 10b5-1 plans that can be found in the company's Insider Trading Policy. The guidelines typically address legal and regulatory issues concerning the plans and trading instructions the company deems permissible. Other details include the amount of time that must pass before the first trade can occur, the minimum and maximum duration of the plan, and the number of allowable plan modifications.

Most guidelines impose limits on the ability to alter plan instructions. To that end, it's essential to design a plan that sets the timing and pricing of trades at levels that offer the highest probability of meeting your diversification and wealth goals. For example, when aiming to build core capital, setting a minimum price floor well above the current trading range could prove suboptimal. We list some of our best practices to consider when establishing these plans (see Sidebar: Ten Tips When Writing Your 10b5-1 Plan).

The Remedys now have a framework for their sale plan based on their required core capital, their goals for long-term diversification, and a road map to start diversifying. But one question lingers. Should trades under the plan start immediately after the lock-up release, or wait until a certain period has passed? The answer depends on many factors, such as the company's operating results prior to the lock-up release, hedge fund short interest, institutional ownership, the overhang of stock that will become saleable upon lock-up release, industry outlook, and general market conditions.

To understand the impact of these factors, we researched the historical behavior of stocks surrounding their lock-up release dates. Specifically, we observed stock price movement during the first year after the IPO for operating companies that raised a minimum of $50 million between January 2011 and December 2020. Our analysis revealed that the average IPO stock bursts out of the gate but tends to pull back around 3% during the 30 trading days before the lock-up ends. Most then go on to recover lost ground in the 45 trading days after the lock-up is released. (**Display 13**).

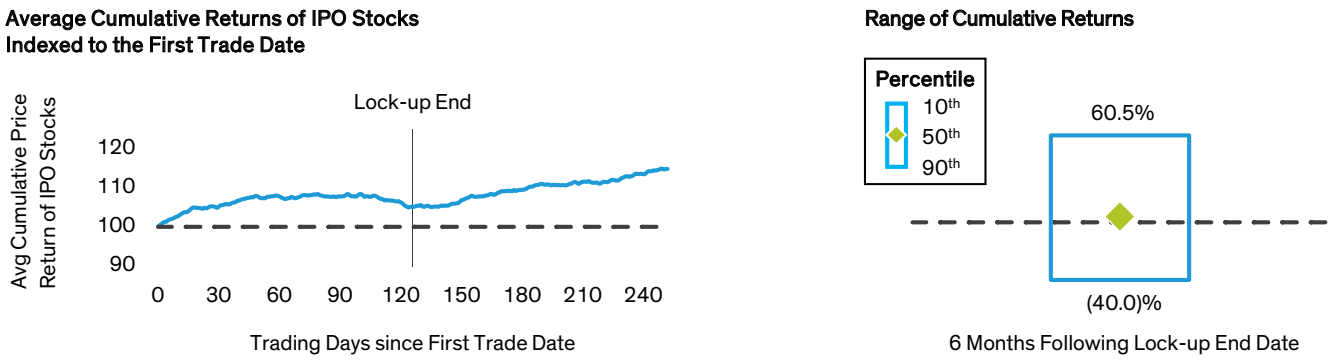
It may be tempting to delay selling shares until after the rebound. Even though the pullback leaves the average shareholder above the IPO price, the averages don't tell the whole story. The dispersion of IPO stock performance is wide. In the six months following the lock-up release date, one in ten IPO stocks dropped at least 40%. For that reason, if a shareholder is comfortable accepting the price for some of the shares at the time the lock-up ends, we'd recommend proceeding with the sale plan.

TEN TIPS WHEN WRITING YOUR 10B5-1 PLAN

1. Request a robust financial planning analysis, and design a trading plan that helps you achieve your goals.
2. Implement a 10b5-1 plan in an open window during the lock-up, so the first trade can be designated to execute shortly after lock-up release.
3. Keep the plan simple to reduce the potential for confusion on the part of the executing broker.
4. Limit the 10b5-1 plan to no longer than one year, so a new plan can incorporate changing information.
5. Avoid modifying existing 10b5-1 plans, which could weaken the affirmative defense against insider trading and force a delay before the new plan can resume trading.
6. Ensure the number of shares that can be sold through the 10b5-1 plan on any given day does not overwhelm the stock's typical daily trading volume.
7. Combine market orders with limit orders to avoid plans that may never execute if price limits are not hit.
8. Place a limit order on all stock option trades that is above the option's exercise price.
9. Confine sales to a single two-to-three-day period each month to limit Form 4 filings to one per month.
10. Consider whether a 10b5-1 plan is required for other strategies such as hedging, exchange funds, or gifting the stock to family or charity.

DISPLAY 13: IPO STOCKS TEND TO SELL OFF LEADING UP TO THE FIRST LOCK-UP END DATE

However, Dispersion in Individual Stock Returns Causes Subjectivity in Deciding When to Sell



As of December 31, 2020.
Past performance is not necessarily indicative of future results. There is no guarantee that any estimates or forecasts will be realized.
The universe of IPO companies includes companies that underwent an initial public offering during the trailing 10-year period between January 1, 2011 and December 31, 2020, excluding special purpose acquisition companies (SPACs), closed-end funds, investment companies, deals categorized as regulation S or rule 144, offer sizes less than $50 million and companies for which pricing data is no longer available, trade date data is not available, or the lock-up end date +30 days is after December 31, 2020. Lock-up end dates are assumed to be 180 calendar days (120 trading days) following the first trade date.
Average cumulative returns of IPO stocks represents the arithmetic average of daily cumulative returns for each day since each stock's first trade date. Therefore, higher returning stocks may skew the average returns more positive, as they receive a larger share of the calculation.
Source: Standard and Poor's, Bloomberg, AB

In many cases, sales are spread out over the days, weeks and months following the lock-up release date. Cara and Heath opted for a 10b5-1 plan, selling some of the shares at market prices over the first three days after the lock-up release, with additional sales governed by stock price movement occurring at monthly points over the subsequent year.

CHARITABLE PLANNING

For stockholders who are passionate about sharing their success, an IPO can unlock powerful opportunities for charitable giving. After we quantify a shareholder's anticipated philanthropic capacity, we help evaluate which strategies best support their aspirations while maximizing tax savings.

One particularly attractive strategy is the donor-advised fund (DAF). A DAF allows donors to contribute to a tax-free investment account from which they can direct gifts to the charities of their choice. DAFs generate a charitable income tax deduction in the year contributions are made, even though they facilitate giving down the road.

Another compelling strategy is the Charitable Remainder Trust (CRT). A CRT enables a donor to pre-fund a charitable gift while retaining income to themselves or another beneficiary, either for their lifetime or a term of up to 20 years. The donor receives an upfront charitable income tax deduction for a portion of the value of the initial contribution. Assets remaining in the CRT at the end of the trust's term pass to charity. The strategy works best when the donor contributes highly appreciated assets, which can be sold without immediately incurring taxes and reinvested within the CRT.

As an IPO approaches, stockholders often wonder when and how to optimally fund their preferred charitable strategy. Donating pre-IPO stock can be complex—and financially suboptimal. With no public market to value the investment, donors must obtain a qualified appraisal, which may result in a discount on the income tax deduction for lack of marketability and control.

Making a charitable gift after the IPO is simpler and provides more flexibility and control. It allows the donor to build core capital first, and to align their contributions with the realization of sizable capital gains. It also avoids the need for an appraisal—and if the stock appreciates between the IPO and contribution dates, it can significantly boost the charitable deduction. Keep in mind, though, that even charitable dispositions of public stock by company insiders may be subject to blackout windows and public disclosures.

FAMILY ENGAGEMENT

Maximizing one's legacy means more than just transferring wealth to the next generation. It is equally important to transfer knowledge and values. The most successful families nurture the relationships, ideals, and culture that are developed over a lifetime. If families haven't already begun identifying shared family values and aligning them with long-term goals, an IPO may be the ideal catalyst. This momentous event is an opportune moment to rally around a unifying ambition that can benefit future generations and communities.

A financial windfall can be life changing, especially if the family's involvement in the new public company is widely known within the community. It is important to anticipate the potential impact on children and family. How can families prepare children to handle new expectations and steward the wealth they may inherit? First, share the family's story. Heirs who grasp the meaning behind a creator's wealth will have a greater emotional stake in it. How was success achieved? What sacrifices were made? What risks and opportunities were faced? Beyond the stories of resilience and triumph, sharing the purpose and vision for family wealth is essential. Intentionally naming a set of shared values that drive a family's decisions—whether personal or philanthropic—can strengthen the structure and dynamics of the unit. After all, children will eventually be responsible for preserving the family legacy once it's established.

But discussing wealth with children is not always easy. Sometimes engaging the next generation through active participation, such as philanthropic giving, opens the door. Philanthropy offers the chance to clarify and communicate values, work towards a common vision for the family's legacy, and begin making financial decisions together. Through this process, the next generation can get to know family advisors, learn about investments, and start test driving decision-making. They'll be guided by conversations about money, but without the focus on personal wealth.

One of the most important services Bernstein provides is educating prospective heirs. This can be delivered through family meetings, family philanthropy, the development of Investment Policy Statements, and customized curricula aligned with family values. Through these forums, we seek to advance an understanding of the trade-offs between enjoying wealth and being stewards of capital for the generations that follow.

CONCLUSION

At Bernstein, we've helped many pre-IPO shareholders and employees navigate the personal financial complexities of a public offering. We provide proactive support all along the IPO timeline. Some rely on us for help quantifying the nest egg needed to ensure financial independence—or establishing a target for future diversification and pre-IPO legacy planning. Others ask for help weighing the trade-offs of pre-IPO option exercises and quantifying the long-term impact of wealth transfer to heirs or charity. For pre-IPO shareholders in need of liquidity, we often analyze the pros and cons of secondary market sales.

Our planning doesn't end at the IPO. We've designed countless 10b5-1 sale plans, right-sizing and investing pools of capital to meet short- and long-term goals. We can help create charitable vehicles like donor-advised-funds, while facilitating communication between family members and preparing heirs to become good stewards of wealth. No matter where your company stands in the IPO lifecycle, our tailored planning and advice can help you achieve your goals.

APPENDIX

DIFFERENT PATHS FROM PRIVATE TO PUBLIC

Though Cara's company was exploring a traditional IPO, in recent years, companies have accessed the public marketplace in other ways. There are many structural differences between an IPO, direct listing, and going public by merging with a publicly traded SPAC (**Display 14**). But there is one key consistency: planning before and after becoming publicly traded remains vital.

During the typical IPO process, underwriters set an offering price based on an expected level of demand for the number of shares being offered. The process can take four to six months, including the SEC's review of offering documents and a roadshow allowing the underwriters to meet with potential institutional investors. In order to manage the supply of tradeable shares, underwriters require a lock-up period of 180 days, preventing pre-IPO company shareholders from selling or hedging.

Recently, some companies have preferred to stay private longer. As of early 2021, there were over 500 private "unicorn" companies worth over $1 billion, representing over $1.7 trillion in value.[7] Their ability to raise private capital and generate cash flow have reduced the need to raise funds through a public offering. Some have become publicly traded to provide liquidity to employees and shareholders and broaden their shareholder base, but have chosen to do so through a direct listing.

The NYSE, NASDAQ, and SEC have set rules for companies directly listing their stock without undertaking a conventional IPO. Usually, a direct listing does not raise additional capital for the company; however, rules allowing a company to do so were announced in late 2020. To meet buyer demand, direct listings usually provide for a greater supply of stock than with an IPO. With a direct listing, the opening price is set by an exchange-designated market maker that efficiently matches buyers and sellers. The direct listing process tends to unfold more quickly than an IPO (typically taking one to two months) and usually there is no lock-up.[8]

Another way for a private company to become public is to merge with a Special Purpose Acquisition Vehicle, or SPAC. In recent years, SPACs have commandeered the IPO market. Nearly half of the IPO volume in 2020 consisted of these blank check companies, and the $83 billion raised stood at six times the previous peak.[9]

A SPAC is created by a financial sponsor, often a private equity firm in partnership with successful business professionals. The SPAC raises capital through an IPO, then proceeds are placed into a trust until the sponsor identifies a target company (which will then be taken public through a merger using both the capital from the IPO and an additional capital raise). IPOs typically fall in the low-to-mid hundreds of millions. The offering price is set at $10 per unit, which purchases a share in the SPAC plus a fraction of a warrant, or right to buy more shares post-merger usually at $11.50.

The SPAC IPO process can average one month less than a conventional IPO, since there are fewer disclosures to make to the SEC in the offering documents (given the SPAC's status as a non-operating company with no financial history). After the offering, a lock-up kicks in for the financial sponsors of the SPAC and its management, as the search begins for a merger or target. The SPAC has two years to complete an acquisition, or funds must be returned to investors (with interest).

Once announced, the targeted combination can take another three to four months to consummate. SPAC shareholders (other than the sponsor and management) who do not wish to hold their shares post-merger can still vote for the merger, then redeem their shares for the original IPO price of $10, plus interest. They are also permitted to keep any warrants and rights. After the merger is publicized, SPAC shares often trade on the news and move significantly above $10. Instead of eventually redeeming, the shareholders can then sell their shares to other investors.

Post-merger, SPAC investors have an ownership stake in a new, publicly listed operating company. Founders, executives, and major shareholders of the newly merged entity face lock-ups, which can exceed a 180-day period. Since SPACs are not immune to the volatility associated with concentrated stock positions, diversification planning remains critical.

DISPLAY 14: ACCESSING THE PUBLIC MARKETS FOR CAPITAL AND LIQUIDITY

IPO	Direct Listing	SPAC IPO	SPAC Merger
Initial capital raise in public market	Well-capitalized company lists shares in public marketplace	Non-operating company raises money for future merger or acquisition	Target company goes public by combining with SPAC
Offering is underwritten by an investment banker	Listing provides liquidity for selling shareholders and sometimes more capital for company	Offering is underwritten by an investment banker	Investment banker advises on combination
Investment banker sets price based on indications of buying interest	Investment banker advises company and market maker where price should be set based on observed pre-opening buy and sell orders	Offering price set at $10/unit which includes a share, fraction of a warrant, and possible right	SPAC sponsor and target set deal price. SPAC shareholders can choose to opt out of deal by redeeming shares at $10 + interest, keeping warrants
Can take 4–6 months from filing to launch	Can take 1–2 months from filing to launch	Can take 3–5 months from filing to launch (with up to 2 years to identify a target and complete a combination)	Can take 3–4 months from announcement to close
Pre-IPO shareholders typically subject to 180-day lock-up	No lock-up although execs and certain shareholders may have one	Founders typically subject to a lock-up of up to a year post business combination	Insiders and large shareholders typically subject to 180-day or longer lock-up

Source: AB

DO I OWN QUALIFIED SMALL BUSINESS STOCK (QSBS)?

Some pre-IPO shareholders may be eligible for a significant tax break upon the sale of their stock if it meets the qualifications under tax code Section 1202 for Qualified Small Business Stock ("QSBS"). If their company stock qualifies, shareholders may be able to exclude capital gains equal to the greater of $10 million or 10 times the basis of the stock.

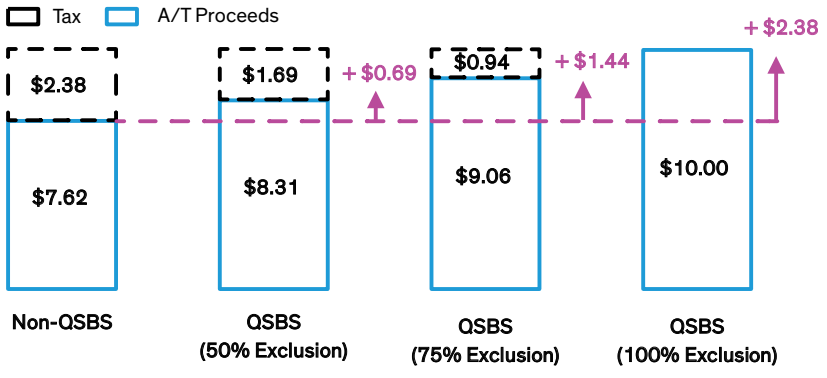
Given the powerful tax incentives on the table, it's important to review the eligibility requirements (**Display 15**). We can help eligible shareholders evaluate strategies to multiply their gain exclusion while transferring meaningful amounts of wealth to their heirs.

DISPLAY 15: REDUCE TAXES WITH QSBS

Forgotten Tax Code Provision Has Made a Comeback

- Subject to the requirements under IRC §1202, the shareholder may exclude realized gain (0% federal tax rate) upon the sale of his or her stock.
- The amount of eligible gain is the greater of:
  - $10 million, or
  - 10 times adjusted basis
- The amount of eligible gain that may be excluded depends on when the stock was acquired at original issue:
  - 50% of gain may be excluded if stock was acquired between 8/11/1993 and 2/16/2009
  - 75% of gain may be excluded if stock was acquired between 2/17/2009 and 9/27/2010
  - 100% of gain may be excluded if stock was acquired after 9/27/2010

After-Tax Proceeds: $10 Million Sale, Zero Basis
(USD Millions)



DISPLAY 16: KEY QSBS REQUIREMENTS

Key QSBS Requirements	
Corporate Structure	Domestic C corporations only
Active Trade or Business	The corporation must use at least 80% of its assets in the active conduct[1] of a qualified trade or business, and must be: Any trade or business *other than*[2]: ○ Service Businesses ○ Banking/Insurance/Leasing ○ Investment Management ○ Farming/Mining/Oil & Gas Extraction ○ Hotels/Motels/Restaurants
Gross Assets	Less than $50 million gross assets at all times between business formation and immediately after stock issuance
Holding Period	Stock must be held more than five years from the date of issuance
Issuance	○ Stock must be issued when corporation is deemed a qualified small business ○ Stock must be issued directly from the company (secondary acquisitions do not qualify) and received by a non-corporate taxpayer (e.g., individuals, pass-through entities, trusts) ○ Stock that is received in exchange for money, other property (not including stock), or as compensation for services provided to the corporation

1 Notably, the corporation must meet the active business test and be a domestic C corporation for "substantially all" of the stock owner's holding period (while "substantially all" is not defined in IRC 1202 and the corresponding regulations, it is defined in other parts of the Internal Revenue Code). See IRC 1202(e).
2 See IRC 1202(e)(3) for a complete list of disqualified trades or businesses.
Source: AllianceBernstein (AB)

1 Funds raised through primary share offerings only. Source: Bloomberg

2 A Special Purpose Acquisition Company (SPAC) is a public shell company that raises money in an IPO in order to merge with a private operating company, allowing the target to become publicly traded. Source: AllianceBernstein and Bloomberg

3 Average first-day return represents the offer-size-weighted average of the returns for all US companies that underwent an initial public offering during the respective decade. The analysis excludes special purpose acquisition companies, closed-end funds, investment companies, deals categorized as regulation S or rule 144, offer sizes less than $50 million and companies in which first-trade-day pricing data is not available. Source: Bloomberg, and AB

4 The universe of IPO companies includes all companies that underwent an initial public offering during the trailing 10-year period between January 1, 2011 and December 31, 2020, excluding special purpose acquisition companies, closed-end funds, investment companies, deals categorized as regulation S or rule 144, offer sizes less than $50 million and companies in which first-trade-day pricing data is not available.

5 A 409A valuation is an independent appraisal of the fair market value of private company stock used to establish the appropriate stock price for options and grants.

6 Lock-up periods may be shorter or longer based on factors such as post-offering stock price movements.

7 Source: CBInsights

8 The company may impose lock-up restrictions for certain company employees and shareholders.

9 Source: AB and SPAC Analytics

NOTES ON BERNSTEIN WEALTH FORECASTING SYSTEM

1. Purpose and Description of Wealth Forecasting System

AB's Wealth Forecasting Analysis is designed to assist investors in making their long-term investment decisions as to their allocation of investments among categories of financial assets. Our planning tool consists of a four-step process: (1) Client-Profile Input: the client's asset allocation, income, expenses, cash withdrawals, tax rate, risk-tolerance level, goals and other factors; (2) Client Scenarios: in effect, questions the client would like our guidance on, which may touch on issues such as when to retire, what his/her cash-flow stream is likely to be, whether his/her portfolio can beat inflation long-term, and how different asset allocations might impact his/her long-term security; (3) The Capital-Markets Engine: our proprietary model that uses our research and historical data to create a vast range of hypothetical market returns, which takes into account the linkages within and among the capital markets, as well as their unpredictability; and finally (4) A Probability Distribution of Outcomes: based on the assets invested pursuant to the stated asset allocation, 90% of the estimated ranges of probable returns and asset values the client could experience are represented within the range established by the 5th and 95th percentiles on "box-and-whiskers" graphs. However, outcomes outside this range are expected to occur 10% of the time; thus, the range does not guarantee results or establish the boundaries for all outcomes. Estimated market returns on bonds are derived taking into account yield and other criteria. An important assumption is that stocks will, over time, outperform long bonds by a reasonable amount, although this is in no way a certainty. Moreover, actual future results may not meet AB's estimates of the range of market returns, as these results are subject to a variety of economic, market and other variables. Accordingly, the analysis should not be construed as a promise of actual future results, the actual range of future results or the actual probability that these results will be realized. The information provided here is not intended for public use or distribution beyond our private meeting. Of course, no investment strategy or allocation can eliminate risk or guarantee returns.

2. Rebalancing

Another important planning assumption is how the asset allocation varies over time. We attempt to model how the portfolio would actually be managed. Cash flows and cash generated from portfolio turnover are used to maintain the selected asset allocation between cash, bonds, stocks, REITs and hedge funds over the period of the analysis. Where this is not sufficient, an optimization program is run to trade off the mismatch between the actual allocation and targets against the cost of trading to rebalance. In general, the portfolio allocation will be maintained reasonably close to its target. In addition, in later years, there may be contention between the total relationship's allocation and those of the separate portfolios. For example, suppose an investor (in the top marginal federal tax bracket) begins with an asset mix consisting entirely of municipal bonds in his/her personal portfolio and entirely of stocks in his/her retirement portfolio. If personal assets are spent, the mix between stocks and bonds will be pulled away from targets. We put primary weight on maintaining the overall allocation near target, which may result in an allocation to taxable bonds in the retirement portfolio as the personal assets decrease in value relative to the retirement portfolio's value.

3. Expenses and Spending Plans (Withdrawals)

All results are generally shown after applicable taxes and after anticipated withdrawals and/or additions, unless otherwise noted. Liquidations may result in realized gains or losses, which will have capital-gains tax implications.

4. Modeled Asset Classes

The following assets or indexes were used in this analysis to represent the various model classes:

Asset Class	Modeled As	Annual Turnover Rate
Municipal Cash	Municipal money-market securities	100%
Cash Equivalents	3-month Treasury bills	100%
Intermediate-Term Diversified Municipals	AA-rated diversified municipal bonds of 7-year maturity	30%
US Diversified	S&P 500 Index	15%
US Value	S&P/Barra Value Index	15%
US Growth	S&P/Barra Growth Index	15%
US Low Vol Equity	MSCI US Minimum Volatility Index	15%
Developed International	MSCI EAFE Unhedged	15%
Emerging Markets	MSCI Emerging Markets Index	20%
US SMID	Russell 2500	15%
High-Risk Intl	Country Fund	15%

5. Volatility

Volatility is a measure of dispersion of expected returns around the average. The greater the volatility, the more likely it is that returns in any one period will be substantially above or below the expected result. The volatility for each asset class used in this analysis is listed on the Capital-Market Projections page at the end of these Notes. In general, two-thirds of the returns will be within one standard deviation. For example, assuming that stocks are expected to return 8.0% on a compounded basis and the volatility of returns on stocks is 17.0%, in any one year it is likely that two-thirds of the projected returns will be between (8.9)% and 28.8%. With intermediate government bonds, if the expected compound return is assumed to be 5.0% and the volatility is assumed to be 6.0%, two-thirds of the outcomes will typically be between (1.1)% and 11.5%. AB's forecast of volatility is based on historical data and incorporates AB's judgment that the volatility of fixed income assets is different for different time periods.

6. Technical Assumptions

AB's Wealth Forecasting System is based on a number of technical assumptions regarding the future behavior of financial markets. AB's Capital Markets Engine is the module responsible for creating simulations of returns in the capital markets. These simulations are based on inputs that summarize the current condition of the capital markets as of June 30, 2020. Therefore, the first 12-month period of simulated returns represents the period from June 30, 2020 through June 30, 2021, and not necessarily the calendar year of 2020. A description of these technical assumptions is available on request.

7. Tax Implication

Before making any asset allocation decisions, an investor should review with his/her tax advisor the tax liabilities incurred by the different investment alternatives presented herein including any capital gains that would be incurred as a result of liquidating all or part of his/her portfolio, retirement-plan distributions, investments in municipal or taxable bonds, etc. AB does not provide tax, legal, or accounting advice. In considering this material, you should discuss your individual circumstances with professionals in those areas before making any decisions.

8. Tax Rates

The federal income tax rate represents AB's estimate of either the top marginal tax bracket or an "average" rate calculated based upon the marginal rate schedule. The federal capital gains tax rate is represented by the lesser of the top marginal income tax bracket or the current cap on capital gains for an individual or corporation, as applicable. Federal tax rates are blended with applicable state tax rates by including, among other things, federal deductions for state income and capital gains taxes. The state income tax rate represents AB's estimate of the "average" rate calculated based upon the applicable state's marginal tax schedule. Where an applicable state tax code permits the exclusion of a portion of capital gain income from gross income for purposes of calculating state income tax such exclusions have been included in the calculation.