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Investment strategy insights

How should investors deal with lump sums?

Chief Investment Office GWM | **10 February 2019** 11:36 pm GMT
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- It is best to put most cash deposits to work right away, because uninvested cash is usually a drag on returns.
- However, for large lump sums, there are good reasons to phase capital into markets over time. But attempting to time the market can be difficult—and costly.
- To help navigate these concerns, this report focuses on strategies to consider—and pitfalls to avoid—when deciding how to put lump sum deposits to work.

Receiving a lump sum can be a crucial turning point in your life. Regardless of whether you have just sold a business, or received a pension payment or inheritance, the most important first step is to devise an investment plan that is tailored to meet your financial aspirations.

But going from a plan to reality isn't straightforward. When deciding how to put your cash to work, you have several options: should you invest right away, wait for a market pullback, or invest a bit at a time? This report helps you to assess each of these options, and how to combine them with portfolio management strategies to put your cash to work effectively.

Examples of lump sum events

1. Sale of a business. After years or even decades of building up a business, entrepreneurs can suddenly receive a large lump sum on the sale of their company either to a private buyer or a public listing. This is a pivotal period for the individual, providing an opportunity to entirely reshape their financial position, which has often been highly concentrated.

After executing a risky-but-successful strategy of concentrating assets into a single enterprise to build wealth, liquidation events create an opportunity to secure this victory by transitioning into a more diversified strategy. While most individuals accumulate a diversified portfolio over many years, an entrepreneur now has the challenge—and the opportunity—of building one all at once.

2. Inheritance. A substantial inheritance can come at any age. This lump sum presents some of the same dilemmas that confront an entrepreneur after selling their business. The appropriate investment strategy here will depend on the age of the individual at the time of their windfall, their expected spending needs over their lifetime, and their appetite for risk.

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Erratum: Please note values for Fig 5 have been corrected.

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3. Retirement lump sum. Instead of buying an annuity on retirement, which provides a guaranteed monthly income, a retiree may also be given the option of a lump sum. A lump sum comes with more freedom to invest funds and means that the residue of the lump sum can be passed on, but this comes at the cost of a higher degree of uncertainty regarding the return and income stream.

What's the right thing to do with the cash?

Build a plan using the 3Ls
The Liquidity. Longevity. Legacy. (3L) approach is a good starting point for handling any lump sum, regardless of its origin. This framework is geared toward aligning a family's assets with their financial objectives over generations. The process begins with a series of key questions to assess what's most important for the family:

- **What do you want to accomplish in your life?** What are your short-, medium-, and long-term goals, and how do you define financial success? What are your priorities, and what trade-offs are you willing to make?
- **Who are the people that matter most to you?** Who do you take care of financially? What more do you want to do for them? Are they financially prepared for the future?
- **What do you want your legacy to be?** How do you want to make a difference? What portion of your wealth do you want to pass on? What causes do you care most about?
- **What are your main concerns?** Do you have enough wealth to achieve your goals? How do you decide between spending, saving, and investing? How do you manage financial risk and uncertainty?
- **How do you plan to achieve your life's vision?** Who do you turn to for financial advice? Do you have a financial plan? How do you track progress?

Answers to these questions are vital to building a purpose-built asset allocation, which can be segmented into three key strategies:

1. Liquidity—to provide cash flow for short-term expenses
Failure to plan adequately for liquidity needs can force clients to sell assets at discount prices. By assessing the family's cash flow needs over the next two to five years, and setting aside funds to meet them, it creates a buffer between cash needs and market returns, thus reducing the risk of being forced to sell assets with high return potential at the wrong time. This strategy generally involves low-volatility assets such as short-term fixed income and cash, as well as borrowing facilities.

2. Longevity—for longer-term needs
These assets are designed to satisfy lifetime needs. With short-term cash needs met by the Liquidity strategy, these assets can be focused on long-term growth, with an asset allocation tailored to the investor's risk appetite and the family's aspirations.

3. Legacy—for needs that go beyond the investor's own
This strategy is assigned to improve the lives of others, both within the family and in society. In many cases, this will include cash flows lasting beyond the investor's lifetime, including philanthropic goals and assets earmarked for future generations. Given the opportunity

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focus over a very long investment time horizon, this strategy has the capacity to invest in asset classes that offer an illiquidity premium, such as private equity, or investment themes that seek to profit from long-term secular trends in society or technology.

Common behavioral biases and pitfalls to avoid

After you've built your plan, it's time to put your lump sum to work. But even though many people appreciate that it's best to be invested over the long term, going from a large cash position to an invested position is difficult. For many investors who have received a lump sum, it can take time to come to terms with market fluctuations in their new portfolio. Even given a similar level of risk as they had pre-liquidation, a 5% loss on a much larger portfolio can now represent millions of dollars instead of thousands. This is doubly true for entrepreneurs and real estate investors when the bulk of their net worth has historically been tied up in assets whose value weren't priced on a daily basis. For these investors, it can take time to become accustomed to the greater price transparency of public markets.

But while it is understandable to worry about volatility and market risk, there are several pitfalls that investors should avoid:

1. The temptation to time the market

There's a certain allure to the idea that we can enter the market at the perfect time, buying stocks at their lowest level and reducing risk before the crowd ahead of market peaks such as early 2000 or September 2007. It is particularly tempting to hold onto cash when markets are trading near all-time highs, because these markets feel "overdue" for a dip that can be bought.

However, most investors have learned the hard way that market-timing can be a fool's errand. In reality, concern over record highs can be overdone. The S&P 500 trades within 5% of a record high 60% of the time, and only 12% of the time more than 20% below its last all-time high. The cost of waiting for a pullback, which can take months or even years to materialize, can be quite high. In addition, investors often overestimate how much they stand to gain from market-timing.

2. Over-allocating to the familiar

Many former entrepreneurs and real estate investors are tempted to allocate a higher allocation to the same investments that helped them become wealthy. In some cases, investors are tempted to buy back into the public stock of a company that they just brought public.

Two behavioral biases are at play here. The first is the familiarity bias, which helps investors be more comfortable taking risk in assets that they understand well. The second is the endowment bias, which causes investors to be more comfortable with assets that they already own. Resisting these temptations can be vital to financial success after a liquidation event, since taking on idiosyncratic and sector-specific risks can increase the risk of permanent portfolio losses and produce a lower risk-adjusted return, leaving less capital to meet the family's goals.

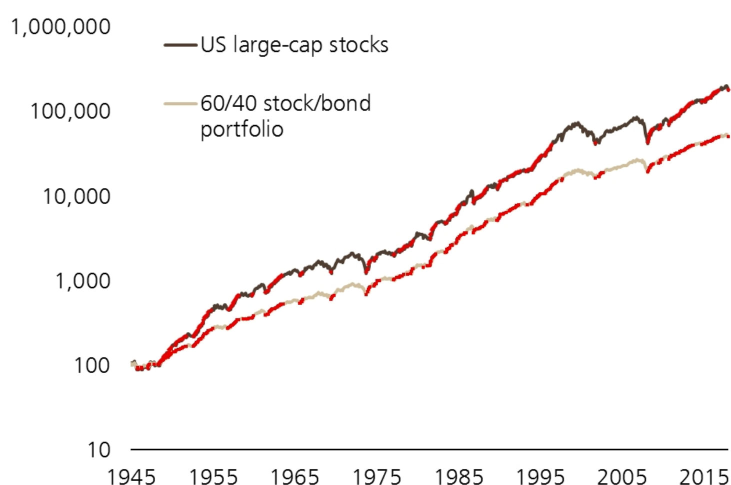
What are the best phase-in strategies?

With all of this in mind, what is the best way to go from cash to being invested in the optimal portfolio?

1. Putting the entire deposit to work straight away
Financial theory would suggest that this is the best option. After all, markets usually trend higher. Bear markets, during which markets fall swiftly and take months to recover, occur rarely, usually years apart from one another. As a result, markets have often traded at levels that would never be revisited, even during future bear markets.

Well-diversified portfolios' rallies are even more persistent, with rarer losses and gains that usually prove more durable. For example, since 1945 a 60% stock, 40% bond portfolio would have spent about 34% of the time setting "never-seen-again" levels, versus about 28% of the time for the US large-cap stock market. Although there are opportunities to add to this balanced portfolio following a dip, its shallower losses mean that any sense of regret on the part of investors is relatively limited.

Fig. 1: Outside of bear markets, stocks rarely revisit old levels
Growth of USD 100, with never-seen-again levels marked in red

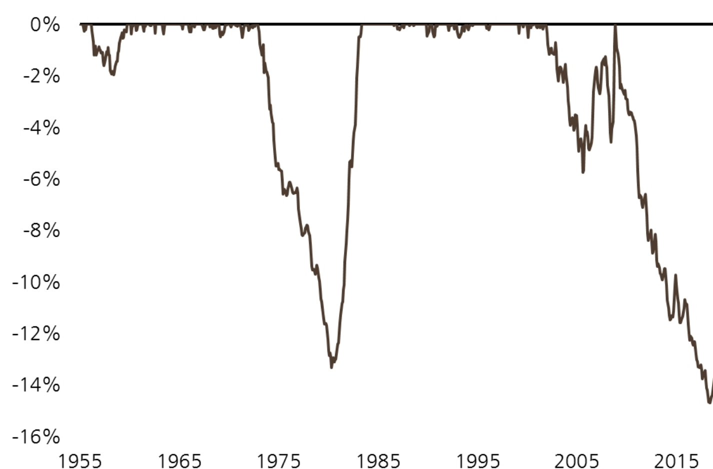


Source: Morningstar, UBS, as of 11 February 2019

In the meantime, uninvested cash is a fairly consistent drag on portfolio returns, especially when viewed in terms of purchasing power. Although cash is a "safe" short-term holding, it's a very risky long-term holding. For example, since 2009, the purchasing power of cash has declined more than 15%, exceeding the inflationary experience in the 1970s (see Fig. 2). Even when short-term interest rates do rise above inflation, cash is far less likely to provide any substantial "real" (inflation-adjusted) return, unlike stocks and even bonds.

Fig. 2: In addition to dragging down portfolio returns, cash loses purchasing power over time

Purchasing power declines in 3-month T-Bills (using US CPI inflation), 1955–2018



Source: Morningstar, UBS, as of 11 February 2019

These factors tell us that, on average, putting funds to work all at once will have a modest edge over strategies that phase in capital or wait for a sizable correction. The likelihood of forgoing capital appreciation—and the size of the performance drag—is significantly higher for longer phase-in time frames. And the potential market timing benefits are much lower for safer and more-diversified portfolios due to their smoother and more consistently positive return streams. On the other hand, the average cost of waiting is greater for more aggressive strategies, whose expected returns are higher.

This is important, because over the course of a lifetime, most investors will have hundreds, if not thousands, of cash deposits into their accounts. Even a small statistical edge can add up to a significant improvement over an investment lifetime. So for most investment deposits, the odds are against the market-timers, for whom the cost of avoiding regret can be very high.

Alternatives to an "all at once" approach

Although the "all at once" math is well and good for everyday deposits—where the law of large numbers allows investors to harness a statistical edge—the math is different for large lump-sum deposits. When an investor's deposits are fewer and more "lumpy," the cost-benefit is shifted, and the potential risk of bad timing becomes more prominent, and there can be psychological benefits of phasing into markets.

2. Putting bonds to work in a lump sum, phasing in stocks

When compared to equities, bond markets entail relatively little drawdown risk. Going back to 1945, an index of intermediate-term US government bonds has spent about 40% of the time at levels that would never again be seen, even at the nadir of a future sell-off. This characteristic is due largely to the mathematics of income reinvestment: the sharper the bond market's loss is, the more quickly it is recovered through higher compound interest. For example, the

largest-ever peak-to-trough drawdown was 9%, during an inflationary shock in 1979. After this sell-off, which took nine months to reach a trough, the market took just two months to register another all-time high.

As a result, putting bonds to work in a lump sum can help to mitigate the potential opportunity cost of a phase-in strategy. In addition, if there is a chance to buy stocks during a dip, the investor's bond holdings may rally due to a flight-to-quality, resulting in some additional capital to deploy as the investor "rebalances" into the stock allocation.

3. Putting cash into markets over time has benefits.
Investment professionals talk about "risk" in percentage terms—and using illusory measurements like "volatility"—but when we experience losses in our portfolios, we feel them in dollar terms. There's no substitute for experience, and learning about risk with real dollars can be an expensive tutorial; phasing in capital helps to reduce that cost.

These psychological costs can be especially high for investors who are phasing in capital that represents a larger share of their net worth. For example, Marie has had USD 1 million invested for years, and she and her partner have become accustomed to a 10% portfolio swing resulting in a USD 100,000 temporary loss. But after selling her business for USD 100 million, that same drawdown will show up on the statement as a USD 10 million loss. Phasing in capital can give time for a family to acclimate to larger dollar swings, and thus condition them to avoid panic selling.

Phasing cash into the market over time (also known as "dollar cost averaging")
We believe the best strategy is to establish a set schedule, and to accelerate each phase-in tranche if there is a market dip of at least 5%. This threshold is common enough to occur frequently during three- to 12-month phase-in processes, and most tend to be temporary. (See data in the Appendix for an assessment of the trade-offs for some different speeds.)

4. Implementing a put-writing strategy
A put-writing strategy can be helpful for building up the equity allocation, potentially at a discount, while earning a small premium in the meantime.

Investors who execute a put-writing option strategy are giving other investors the right to sell them a security (e.g., an exchange-traded fund [ETF]) at an agreed-upon price (i.e., strike price). Investors that buy put options are willing to pay a premium for this right because a put contract can help them protect their own long position in the security, or help them profit from a sell-off in the security's price. From the perspective of the put-writer, the put will likely expire worthless unless there is a sell-off in the underlying security. And if a sell-off does occur, the put-writer will simply purchase the ETF at the strike price, knowing that their effective "purchase cost" is actually lower, discounted by the amount of option premium that they received when selling the put.

The main drawback of a put-writing strategy is that—similar to other phase-in strategies—it leaves investors underexposed, so they will not fully participate in the upside if the security rallies. In

addition, there is no guarantee that the put option will be executed, so it could take longer to fully put cash to work.

The rate at which this strategy leads to an accumulation of equities will depend on market trends and the level at which the investor writes the put options. One method for improving the odds of execution, and potentially garnering a higher option premium, is to sell put options at a strike price close to the current market price (i.e., "at the money"). For phase-in strategies with less urgency, investors can use strike prices lower than the current market price (i.e., "out of the money"), which will only generally oblige the put writer to buy equities if the market falls by more than a certain amount, and will often expire worthless, leaving the investor to sell further put options to keep collecting premiums. Regardless of this "moneyness" decision (stock options jargon for where the strike price is set), the pace of stock accumulation will generally be slower if markets are rising, since put options are less likely to hit the strike prices at which equities will be assigned to the option seller.

To help illustrate the cost-benefit trade-off of some of these variations, we have run a hypothetical back-test of performance for three-month put-writing strategies at three strike prices: at the money ("ATM"), 5% out of the money ("5% OTM"), and 10% out of the money ("10% OTM"). Under this analysis, the at-the-money options would have been executed around 30% of the time, versus 14% and 6% for the lower strike prices. All three strategies would have underperformed a simple long-only approach, on average, with more underperformance for the further out-of-the-money strategies.

Fig. 3: Put-writing could deliver some stock market upside, with reduced downside risk

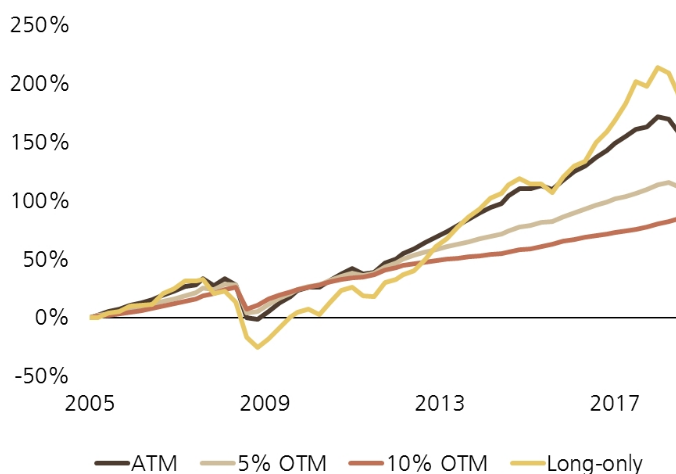
Summary statistics, performance of a long-only stock market strategy and select put-writing strategies

	ATM	5% OTM	10% OTM	Long-only
Average return p.a.	7.1%	5.6%	4.5%	8.5%
Volatility p.a.	8.1%	6.0%	4.6%	12.5%
Risk-adjusted return	0.89	0.93	0.98	0.68

Source: Bloomberg, UBS, as of 11 February 2019

Fig. 4: Over the long run, put-writing strategies' shortfall becomes larger

Cumulative performance of a long-only stock market strategy and select put-writing strategies, 2005–2019



Source: Bloomberg, UBS, as of 11 February 2019

Note: For simplicity, this analysis uses European-style put options, which can only be executed on the expiration date. American-style options, which can be executed until and including the expiration date, would result in a higher probability of execution, and are recommended for phase-in strategies, but are more difficult to simulate.

Please note that the aforementioned analysis assumes that the investor is selling three-month put options. Investors should also consider selling longer-term puts to garner a higher option premium (and, in the case of US investors, to garner long-term capital gains tax treatment). All things being equal, higher strike prices should be chosen for longer-term put-writing in order to keep the same likelihood of execution.

5. Buying call options

The biggest risk of any phase-in strategy is "opportunity cost," where markets rally sharply, resulting in forgone gains when the investor eventually buys at a higher price. Call options are one way to help defray this opportunity cost.

Purchasing call options gives an investors the right to purchase a set amount of a security at a given strike price any time until expiration, in exchange for an upfront premium payment. Buying call options with a higher strike price (further "out of the money"), or a nearer expiration date, reduces the cost of this "down payment" per unit of exposure to the underlying. And although these changes reduce the chance that the call option will be profitable on its own, this can be an acceptable trade-off in the case of phase-in strategies.

6. Using structured investments
As an alternative to directly purchasing options strategies or other derivatives, some investors may be willing to fully commit their cash upfront in exchange for a structured investment that provides some combination of these strategies' characteristics. For example, some structured investments limit upside participation in an underlying index, in exchange for downside protection, a fixed coupon payment until maturity, or other features to adjust the likely distribution of returns.

There are many potential features available through structured investments, and you may be able to tailor an investment to meet your specific objective and phase-in time frame.

Bottom line
The arrival of a large lump sum can mean financial independence, allowing you to devote more of your time to your family, travel, or other interests. But it can also involve some difficult financial choices. While moving your funds quickly from cash into higher return financial assets is typically the most rational choice, this also involves heightened risks in many cases. We hope this research has been helpful in outlining some of the choices you will face.

Case studies

Here are some hypothetical scenarios to help demonstrate the process from beginning to execution.

1. A 50-year old entrepreneur selling their business
Judy Smith has spent decades building up a successful machine tools maker. She has decided to accept an offer from a larger rival to buy the firm for USD 15 million. After spending many years with the majority of the family's capital tied up in the business, Judy and her husband John now need to manage the capital effectively and build a plan for their financial wealth.

The first step is to plan out spending needs. Both of the Smith children have already graduated from university and are independent. Judy and John own their primary residence, as well as a vacation home. Over the coming two to five years, the Smiths estimate that they will need about USD 3 million of cash flow, including about USD 1 million to buy a boat for the lake by the vacation home.

This leaves the Smiths with about USD 12 million to invest for the remainder of their lives and beyond. Judy would like to make a bequest to her alma mater, and decides to set aside USD 1 million to be invested in a Legacy strategy for this purpose.

Judy and John, who are already experienced investors, decide to put all of the Longevity fixed income assets, as well as the Legacy strategy, which is committed to a private-equity-heavy strategy, directly to work. But for the equity portion of the Longevity strategy (USD 6 million of the USD 11 million), they decide to put the funds to work over the course of six months: USD 2 million today, USD 2 million in three months, and the last USD 2 million in six months. They also plan to immediately execute the next tranche if stocks fall at least 10%. Global stocks rally 20% in the first four months, but then fall 15%, at which point the Smiths execute their last equity tranche.

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2. A 65-year old retiree with a USD 3 million lump sum
David Mitchell, a 65-year old dentist, has decided to retire after a long and successful career. Instead of leaving capital tied up in his dental practice and taking an annual payment from the business, David accepts a USD 3 million buyout from his partners.

David's wife, Victoria, plans to continue working for several years, so their short-term cash needs are covered by their existing emergency fund. The Mitchells decide to use the lump sum payout to bring their investment portfolio to a conservative asset allocation, with a high weight to fixed income. Given little chance of a sharp or sustained sell-off in fixed income markets, the Mitchells opt to invest the full deposit immediately.

3. A 35-year old professional receiving a USD 5 million gift from parents
Jeremy Corrigan's parents run a successful medium-sized dry-cleaning business. As part of their estate planning strategy, they decide to give Jeremy and his sister, Toni, USD 5 million apiece.

Jeremy has an established career as a university lecturer, and he plans to continue working, so his main short-term cash flow needs can be met by his existing emergency fund. Over the next few years, he plans on buying an apartment near work, for a cost of around USD 1 million, so he puts these funds aside in a short-term fixed-income-heavy Liquidity strategy.

With the remaining USD 4 million, which Jeremy does not expect to spend for decades when he retires at 65, Jeremy and his advisor decide on an aggressive equity-heavy strategy, to take advantage of long-term growth potential. This will likely represent a significant portion of Jeremy's retirement nest-egg because of his profession's modest earnings potential, so he decides on a cautious approach to entering the market. Jeremy opts for a put-selling strategy that will help him gradually phase into his equity allocation over a period of at least 12 months. The puts that he sells expire worthless, and he continues to roll the strategy forward and harvest premiums until, about 18 months after beginning the process, he is assigned his stock allocation following a sizable market sell-off.

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Appendix: Assessing phase-in speeds

Assuming a 60%/40% stock bond portfolio, a lump-sum strategy has a significant edge, on average, over most dollar-cost averaging approaches. The tables below show the hypothetical results of three-, six-, nine-, and 12-month phase-in plans versus a lump-sum approach.

Fig. 5: On average, phase-in strategies are costlier when executed over a longer time-frame, but also more likely to result in a buying opportunity

Hypothetical performance phase-in strategies, using returns since 1945, assuming a portfolio consisting of 60% US large-cap stock and 40% intermediate US government bonds

3m phase-in	Lump sum (60/40)	Phase-in (60/40)	Excess return (Lump sum vs. phase-in)
Average	1.5%	0.8%	0.8%
High	13.0%	6.8%	7.1%
Low	-15.8%	-8.4%	-9.0%
St dev	3.7%	1.9%	1.9%
% positive	69%	68%	68%
6m phase-in			
Average	3.8%	1.9%	1.9%
High	27.1%	14.1%	16.4%
Low	-21.5%	-11.1%	-11.2%
St dev	6.0%	3.2%	3.3%
% positive	76%	76%	76%
9m phase-in			
Average	6.2%	3.1%	3.1%
High	35.8%	17.0%	22.9%
Low	-24.6%	-15.4%	-15.2%
St dev	8.0%	4.3%	4.5%
% positive	80%	78%	79%
12m phase-in			
Average	8.7%	4.3%	4.4%
High	45.6%	21.8%	29.5%
Low	-26.6%	-18.5%	-15.7%
St dev	9.6%	5.2%	5.5%
% positive	83%	81%	81%

Source: Morningstar Direct, UBS, as of 11 February 2019

Appendix

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Version 01/2019. CIO82652744

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