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Tax optimal equity portfolio transition

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The possibility of a hefty tax bill can be a heavy burden for a portfolio with considerable gains. In the United States, realized gains are taxed and unrealized gains are not. Investors may defer or even forgo a necessary portfolio adjustment to manage tax charges. To address this issue, we outline a framework for transitioning a legacy portfolio towards a more diversified target portfolio with a given annual tax budget.

Portfolio needs and preferences often change over time. For instance, asset owners may want to reduce portfolio risk when they get older, incorporate ESG criteria or re-establish portfolio diversification when outsized gains of certain positions lead to significant concentration. All of these activities involve realizing gains and, depending on the tax system, may result in a substantial tax bill. A nuanced transition approach is therefore required, which incorporates both the need for portfolio adjustment and the desire to limit its tax impact.

We begin by calculating the total tax burden incurred to fully transition a legacy portfolio into a target portfolio. This tax bill can then be split into annual tax budgets, i.e., maximum yearly taxation totals until the transition is complete. At the beginning of each year, the annual tax budget is utilized fully by realizing gains, after which the portfolio is managed on a tax-neutral basis for the rest of the year – matching any realized gains with realized losses until the budget is refreshed at the beginning of the following year. This disciplined and gradual build-up of the desired target portfolio can avoid the substantial one-time tax bill that could come with a portfolio replacement all at once.

Long-term transition strategy

To start, we create a simple long-term transition strategy to convert a legacy

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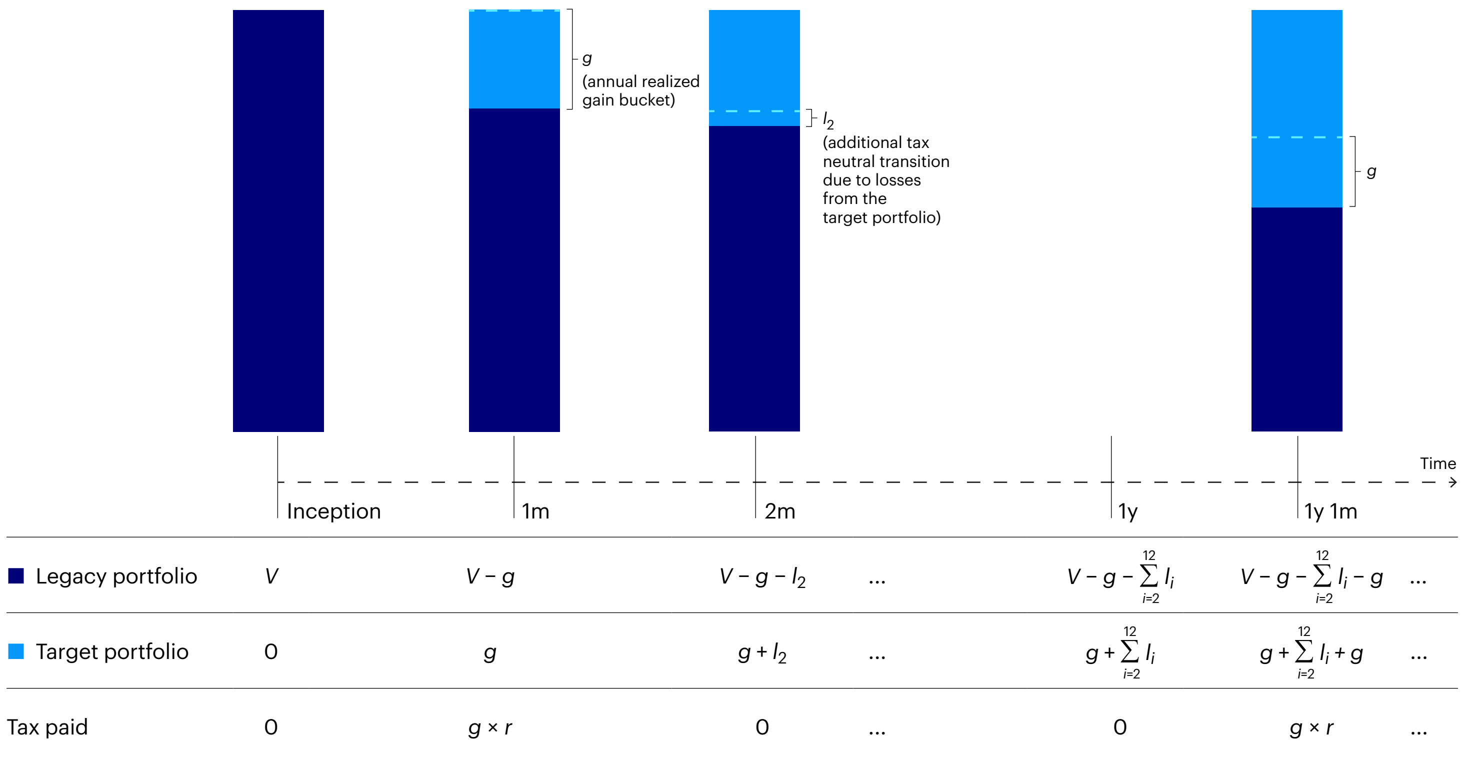
Figure 1
Overview of the transition process
We assume taxes are paid from funds outside the portfolio and do not reduce the money invested



	Inception	1m	2m		1y	1y 1m	
Legacy portfolio	V	$V - g$	$V - g - l_2$	...	$V - g - \sum_{i=2}^{12} l_i$	$V - g - \sum_{i=2}^{12} l_i - g$	...
Target portfolio	0	g	$g + l_2$	...	$g + \sum_{i=2}^{12} l_i$	$g + \sum_{i=2}^{12} l_i + g$	...
Tax paid	0	$g \times r$	0	...	0	$g \times r$	...

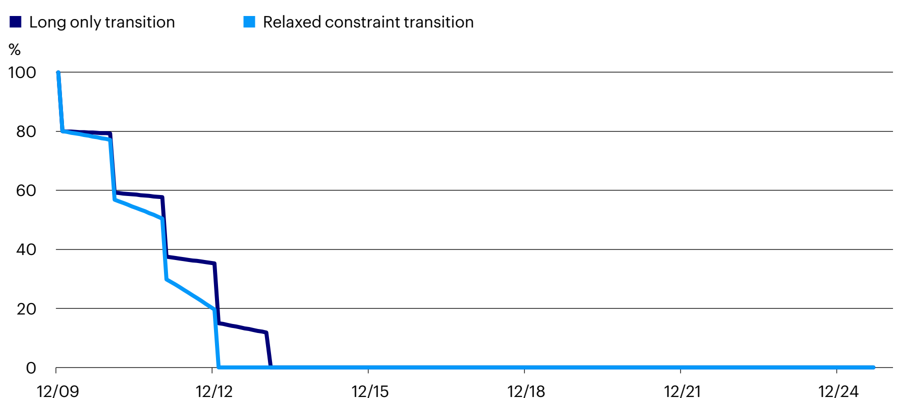
Source: Invesco.

portfolio into a better-diversified target portfolio. We first set a yearly tax budget, which equals the annual realized gain budget (g) multiplied by the individual tax rate (r). In January of every year of the transition period, we sell as many assets from the legacy portfolio – which typically has meaningful embedded gains – until the annual tax budget is fully utilized and invest the pre-tax proceeds of the sale into the target portfolio (this assumes that there are enough funds to meet the tax bill without selling part of the investment altogether). We repeat this process each year until the transition is complete.

By using the entire annual tax budget at the beginning of each year, we speed up the transition. And we can speed it up even further by using losses from the target portfolio over the following eleven months to convert an additional part of the legacy portfolio without additional tax cost. Figure 1 illustrates the process.

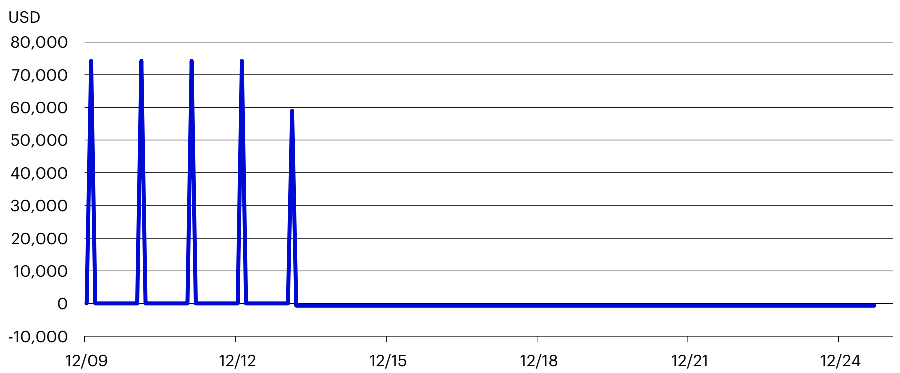
Importantly, the annual tax budget is always respected – regardless of market moves. For example, when equities are strong, the target portfolio is unlikely to suffer meaningful losses throughout the year, resulting in minimal additional transition opportunities. On the other hand, if equities are weak, there may be significant losses that can be harvested, allowing a faster transition without additional tax payments.

Figure 2
Evolution of the legacy portfolio during the transition



Source: Invesco. For illustrative purposes only.

Figure 3
Tax paid



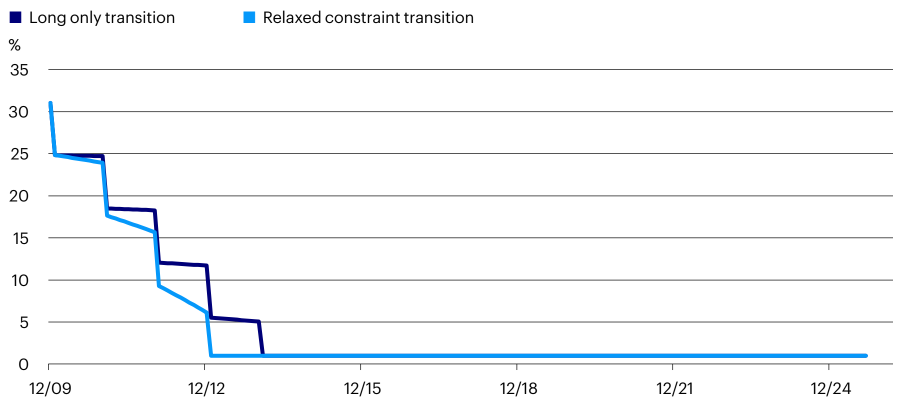
Source: Invesco.

Case study: Transitioning a highly concentrated portfolio

In this example, we seek to transition USD 1,000,000 of a single stock.[1] Assuming that all gains are long term, under US tax law the initial tax liability would be USD 371,000 (= 0.371 × USD 1,000,000) if we were to completely liquidate the portfolio and reallocate to a new portfolio. So instead of incurring that entire tax bill immediately, it would be interesting to transition this concentrated portfolio into an index-oriented diversified portfolio over time. To accomplish this, we consider two potential target portfolios: a long-only S&P 500 portfolio and a relaxed constraint tax-optimized S&P 500 strategy that can employ modest amounts of shorting and leverage. Figure 2 shows how the transition would take place (assuming no market movements) and how both transition portfolios would evolve over time.

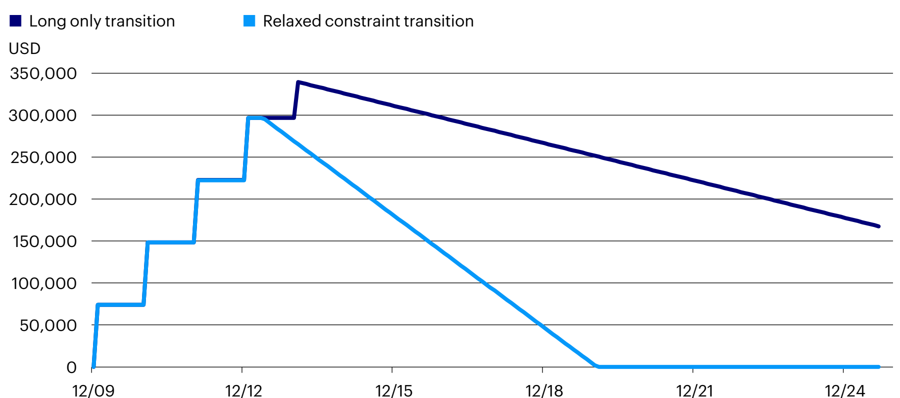
We can see that the transition happens gradually, with the majority occurring at the beginning of each year and

Figure 4
Tracking error against target benchmark



Source: Invesco.

Figure 5
Cumulative taxes paid



Source: Invesco.

The more significant the losses harvested from the target portfolio, the faster the transition will occur.

incremental shifts occurring during the remaining months. As stated previously, the annual tax budget is fully spent in the first month of the year (figure 3). After the first month, there are no more tax payments, but the transition continues, as gains from the legacy portfolio can be offset by losses harvested from the target portfolio. The relaxed constraint portfolio employs enhanced tax loss harvesting techniques, thereby allowing more tax-neutral transitioning and resulting in a faster transition.

In figure 4, we look at the tracking error during the transition between the client portfolio – which contains both legacy assets and newly invested assets in the target portfolio – and the benchmark. We can see that tracking error gradually declines from 30% (when the portfolio is highly concentrated and contains only 1 stock) to 1% (when the desired diversification and investment objective is achieved). Mirroring the stepwise transition of the legacy portfolio, the tracking error also declines gradually. At the beginning of each year, when most of the gains are realized, the tracking error declines meaningfully, while we observe marginal decreases during the calendar year due to further tax-neutral transitions.

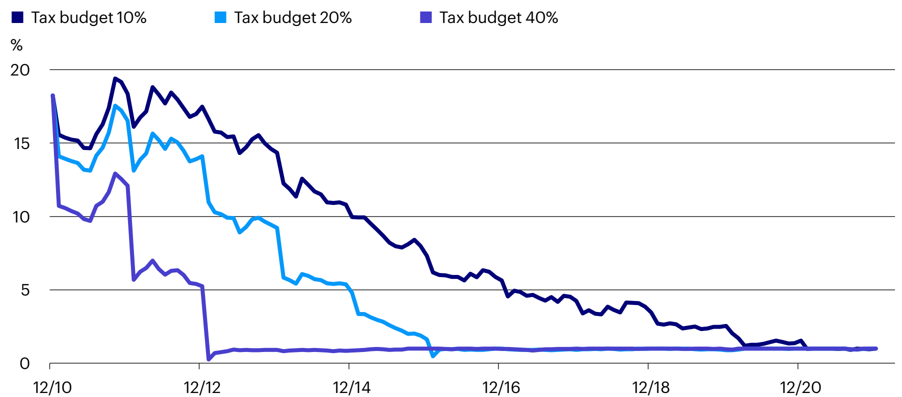
Once the portfolio's tracking error relative to the benchmark has reached 1%, we deem the portfolio fully transitioned – from then on, it can be managed in a standard, tax-optimal way, subject to risk controls.[2]

Finally, it is worth highlighting the potential benefits of a relaxed constraint transition over a long-only transition. Firstly, the planned transition tends to happen much faster so that the investment objective is achieved more quickly. The more significant losses harvested from the target portfolio result in a faster transition. So even for the same annual tax budget, the relaxed constraint process is more efficient at achieving its transition objective. Secondly, a relaxed constraint transition strategy can continue to generate significant tax alpha after the transition is complete. Thus, investors can completely transition from a highly concentrated portfolio with considerable gains into a diversified portfolio with meaningful ongoing tax savings post transition (figure 5).

Suitability-based tax and risk preferences

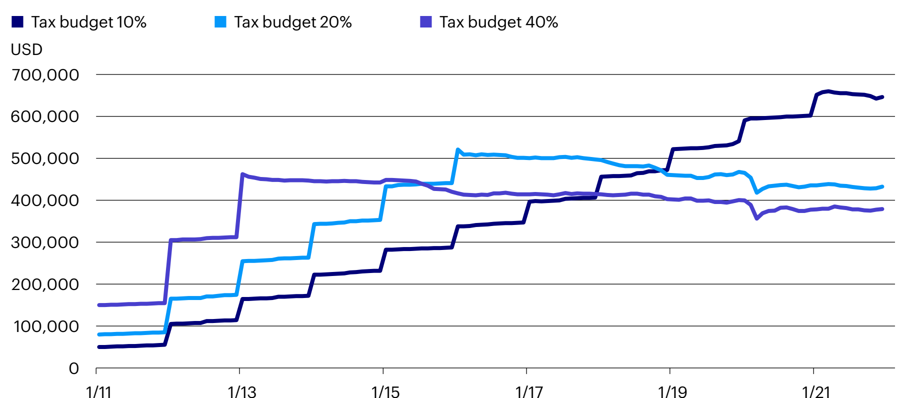
To test how the proposed transition framework functions in practice, we produce a simulation using historical market data with settings in line with the model above. The objective is to transition

Figure 6
Tracking error against target benchmark



Source: Invesco.

Figure 7
Cumulative tax paid



Source: Invesco. Transition analysis shown utilizes the long-only construction methodology.

a highly concentrated portfolio with considerable unrealized gains into a long-only diversified portfolio with a risk target similar to the S&P 500. Again, the legacy portfolio contains only one stock with a $1,000,000 market valuemade up entirely of long-term gains. We start the analysis in December 2010 and continue it for 10 years based on our previous assumptions.

To illustrate different preferences and journeys, we compare three different annual tax budgets – 10%, 20% and 40% of the total tax liability at transition (or strategy) inception. A higher tax budget leads to a quicker transition with more diversification and a higher tax bill upfront.

Interestingly, for all three tax budgets, the transition pattern is very similar but, as expected, results in varying timeframes for full transition. As figure 6 shows, the full transition (hitting the desired target portfolio and diversification) is achieved more quickly with a higher tax budget. In our backtest, it takes approximately two years for an investor with a tax budget of 40% to complete the transition, while it takes roughly 10 years for a tax budget of 10%.

In the long run, we find that the portfolio with a higher tax budget pays the least taxes. While this may at first seem counterintuitive, figure 7 illustrates the dynamic. The portfolio with a higher tax budget transitions sooner to the tax-optimal strategy, thereby enabling more loss harvesting. Those harvested losses are valuable, as they can be used to offset future gains elsewhere in the portfolio (or some other account held by the same investor). Thus, in many instances, it is more favorable from a tax perspective to transition faster. A higher tax budget early on allows more losses to be harvested from the desired portfolio later down the line, which can enhance long-term after-tax wealth.

Although the above case study considers an extreme example of a concentrated portfolio with high unrealized gains, this long-term transition framework can also handle other types of portfolios – even when they are broadly diversified and hold depreciated assets. The framework can also incorporate pooled vehicles like ETFs and, in some instances, mutual funds as well.

Conclusion

Tax-efficient portfolio transitions can substantially limit investor's tax burden while still allowing the desired diversification and portfolio exposures. Whether a faster or a slower transition is more appropriate may depend on the asset owner's individual circumstances. Nevertheless, a faster transition will often be more favorable in the long run, despite the likelihood of higher tax payments upfront. This kind of approach allows more losses to be harvested from the target portfolio once the transition is complete, which can enhance total after-tax wealth over time.

Notes

1 For simplification, transaction costs are assumed to be zero.

2 More about tax optimization and tax-optimal index tracking strategies can be found in Gupta et. al. (2022).

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