



Capital Partners

your partner for alternative investments

The endowment model – as relevant as ever

“I see every day how competitive the markets are, and how tough. So the idea that you can do this yourself, that’s out the window.”

David F. Swensen, CIO Yale University Endowment from 1985 to 2021

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Introduction

Following a year in which expected returns for bonds and equities were at historical low levels and valuations were near 20-year highs, the question of whether endowments should continue to pursue their original investment model is highly relevant (Chart 1). Today's market and economic conditions are fundamentally different compared to the environment in the 1980s, when the so-called "endowment model" was originally adopted by Yale University's endowment. New considerations such as the natural environment, social and governmental aspects, new asset classes and a focus on cost-efficiency must now be incorporated into investment decisions. This paper will provide a background on the endowment model of investing, describe the LGT history, discuss both core investment principles and the benefits and challenges of implementing

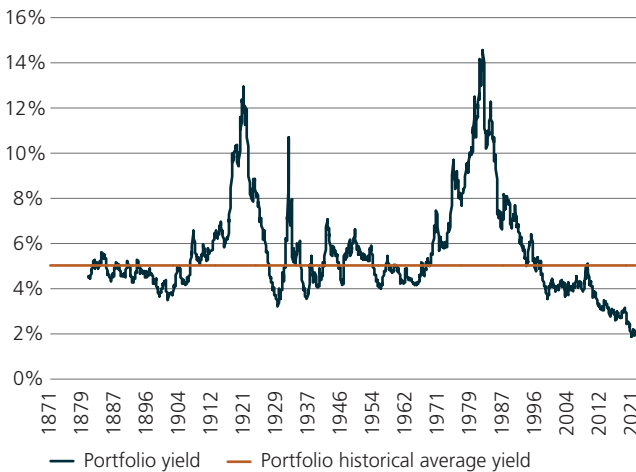
this model. Finally, the paper will focus and discuss key aspects on the role of private market assets in the context of the strategic asset allocation.

In our opinion, the endowment model is as relevant as ever in today's environment. The expectation of low returns for traditional markets underlines the importance of true diversification, of alternative investment strategies and the famous alpha. Given their long-term investment horizon, endowments have the suited framework, approach and structure to pursue all of these objectives. The endowment model is also not static as it evolves to incorporate new investment considerations, stakeholder concerns and innovative asset classes and strategies over time.

Chart 1: current market conditions

Capital markets suggest low prospective returns

Yield of 50% equities and 50% bonds portfolio

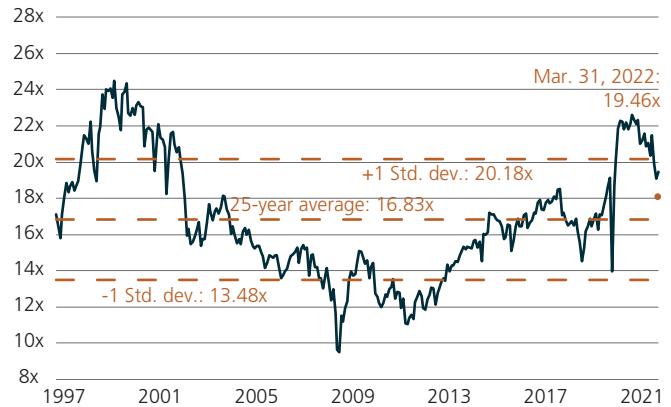


Source: LGT Capital Partners, Robert J. Shiller and Refinitiv. Robert J. Shiller's historical portfolio yield date range, 31 January 1871 to 31 December 2021. Performance data net of fees and all costs charged by the underlying funds, gross of all LGT fees. Fees and other costs will reduce the performance to the investor. Numerical modelling is purely indicative and not a guarantee of future results. This data is purely indicative and is not a guarantee of future results, and there can be no assurance that the fund or portfolio will achieve comparable results.

Past performance is not a guarantee, nor an indication of current or future performance. Returns may increase or decrease as a result of currency fluctuations.

Valuation near 20-year peak levels

S&P 500 Index: Forward P/E ratio



Source: FactSet, FRB, Refinitiv Datastream, Robert Shiller, Standard & Poor's, Thomson Reuters, J.P. Morgan Asset Management.

Price-to-earnings is price divided by consensus analyst estimates of earnings per share for the next 12 months as provided by IBES since March 1997 and by FactSet since January 2022.

Part 1: Endowments, their objectives and results

Endowment funds are generally non-taxable pools of assets designed to support the goals of a university or non-profit organization in perpetuity. As of the end of 2021, there were more than 700 endowments in the U.S. alone with total assets under management of more than USD 800 billion. Chart 2 shows the 15 largest private U.S. endowments and their assets under management.

Chart 2: 15 largest U.S. endowments and their assets under management

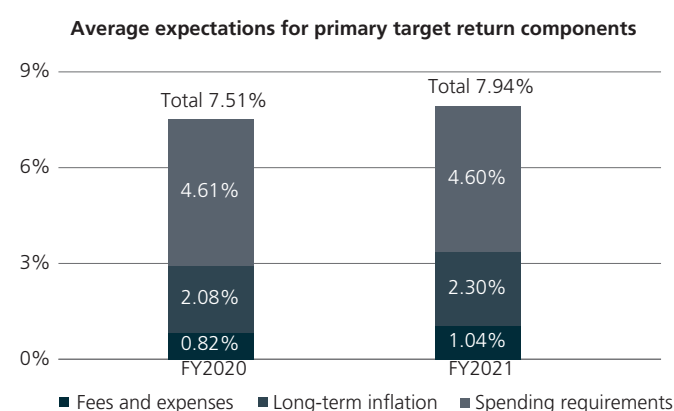
Institution	State	Endowment (billions USD (FY2021))
Harvard University	Massachusetts	\$53.20
Yale University	Connecticut	\$42.90
University of Texas System	Texas	\$42.10
Stanford University	California	\$37.80
Princeton University	New Jersey	\$37.70
Massachusetts Institute of Technology	Massachusetts	\$27.70
University of Pennsylvania	Pennsylvania	\$20.50
University of Notre Dame	Indiana	\$18.10
Texas A&M University System	Texas	\$18.00
University of Michigan	Michigan	\$17.00
Northwestern University	Illinois	\$14.96
Columbia University	New York	\$14.30
Washington University in St. Louis	Missouri	\$13.54
Duke University	North Carolina	\$12.70
University of California (system-wide regents portions only)	California	\$12.14

Source: 2021 NACUBO-TIAA study of endowments

Generally, the two main objectives of endowments are to 1) preserve the organization's capital in real terms over time and 2), to fund future cash needs from investment returns. These two goals pose a relevant investment challenge as returns must be sufficient to meet spending needs or, otherwise,

assets might decline over time. To maintain or even grow assets under management, endowments target returns that cover inflation, fees and expenses plus a rate depending on their individual spending policy, while keeping risk at a level that is tolerable for the institution. Chart 3 shows the average target returns across U.S. endowments in fiscal years 2020 and 2021 and its components: fees and expenses, inflation, spending requirements.

Chart 3: average expected returns



Source: 2021 NACUBO-TIAA study of endowments

In order to achieve these goals, endowments have followed a set of investment principles which have commonly been called the endowment model. This approach was first adopted by Yale University in the 1980s and popularized by other large endowments in the 1990s. David Swensen, CIO of Yale University's Endowment from 1985 until his death in 2021, is widely credited with defining the approach and for his book "Pioneering Portfolio Management", published in 2000, which is still a key reference on the topic.

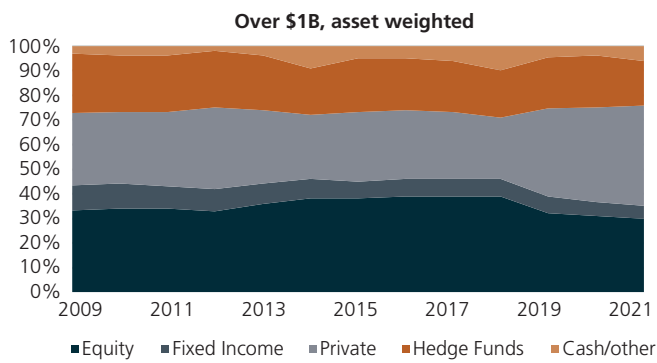
At the core of the endowment model lies a long-term investment horizon that allows for broader diversification, a principle which Swensen learned from his mentor, Nobel Laureate James Tobin, and from modern portfolio theory, fathered by another Nobel Prize winner, Harry Markowitz. As a consequence, the model favors large allocations to non-traditional assets, including illiquid investments, –such as private equity, private debt, infrastructure, real estate and hedge fund strategies–which are likely to achieve higher risk-adjusted returns in the long term.

Chart 4 shows the average asset allocation of the largest U.S. endowments (above USD 1 billion) and how these have changed over time. It shows that endowments have typically diversified across asset classes, particularly into alternative investment strategies, which often constitute as much as 50-60% of their portfolios. Illiquid or semi-liquid private market investments have been a key component of

these allocations. As we will discuss at the end of this paper, private market assets tend to generate higher risk-adjusted returns than public market equivalents through a combination of harvesting illiquidity premiums, of direct corporate engagement and of exploiting pricing inefficiencies.

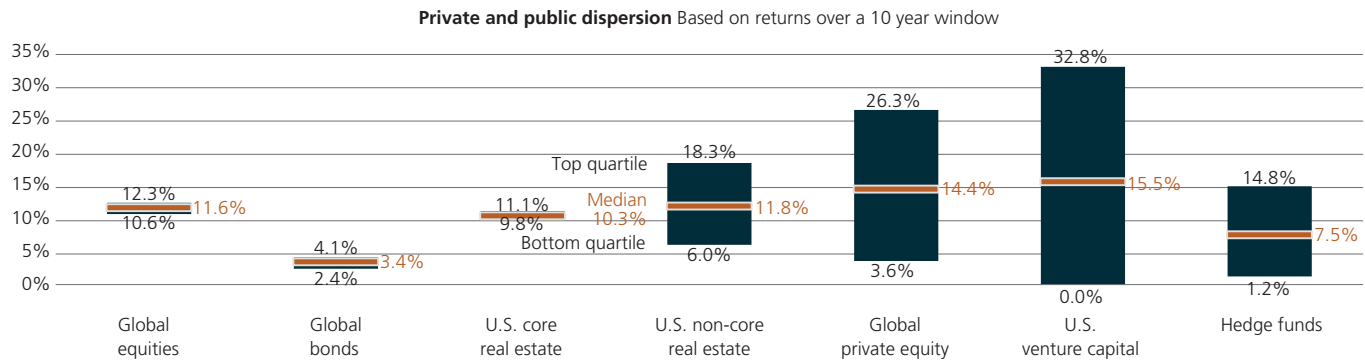
In addition to a long-term investment horizon, endowments take a similar approach when it comes to identifying managers and maintaining relationships with them. This partnership mentality creates the opportunity to search for managers that have the unusual talent to consistently generate above-average returns in excess of market indices. It takes resources, skill and access to develop trusting and successful investment relationships and due to their long-term investment approach, endowments have a comparative advantage to find and sustain them. The search for skill, and in particular the search for managers that can generate excess returns (alpha), is key to navigate the alternative investment universe as the dispersion between top and bottom managers is considerably higher than in public markets (Chart 5).

Chart 4: endowments' asset allocation



Source: 2021 NACUBO-TIAA study of endowments

Chart 5: dispersion of manager performance

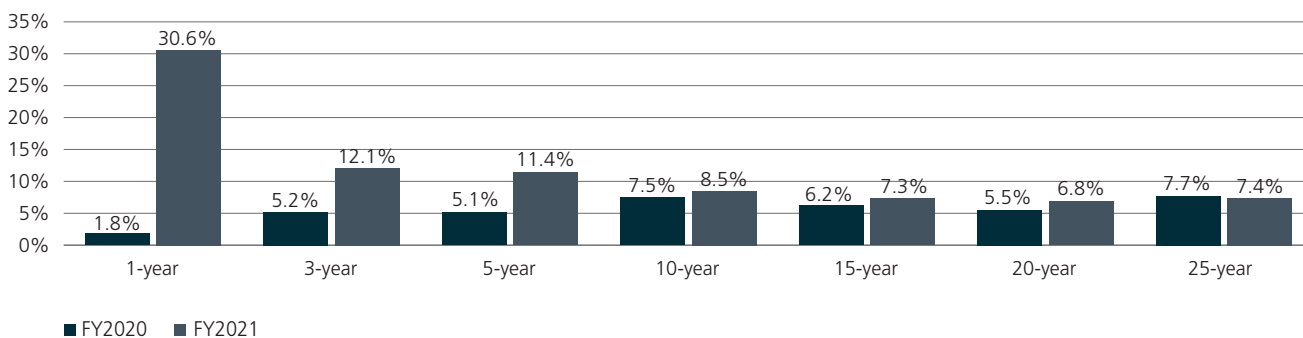


Source: Lipper, NCREIF, Cambridge Associates, HFRI, J.P. Morgan Asset Management

Endowments have often been pioneers when allocating to new, emerging asset classes and strategies, such as for example private equity co-investments and quantitative hedge fund strategies. By nurturing strong connections with academia and an interest in research, endowments have continuously promoted financial innovation. The ambition to build state-of-the-art portfolios fits these institutions well as they are typically patient and can afford to wait for future results and as a consequence, more willing to experiment than other institutional investors.

Investment management is ultimately about performance and hence the question lingers: how have endowments performed so far? Chart 6 shows the historical average annualized net return of U.S. endowments for fiscal years 2020 and 2021. The most recent data indicates that short- to medium-term performance (up to 5 years) has been above 10% p.a., typically driven by a very strong result in 2021. However, over long horizons, historical average performances converge to around 7.5% p.a. It is important to note that if replicated in future years, these historical long-term average returns will not be sufficient to cover the most recent target return estimates of close to 8%, as shown in Chart 1.

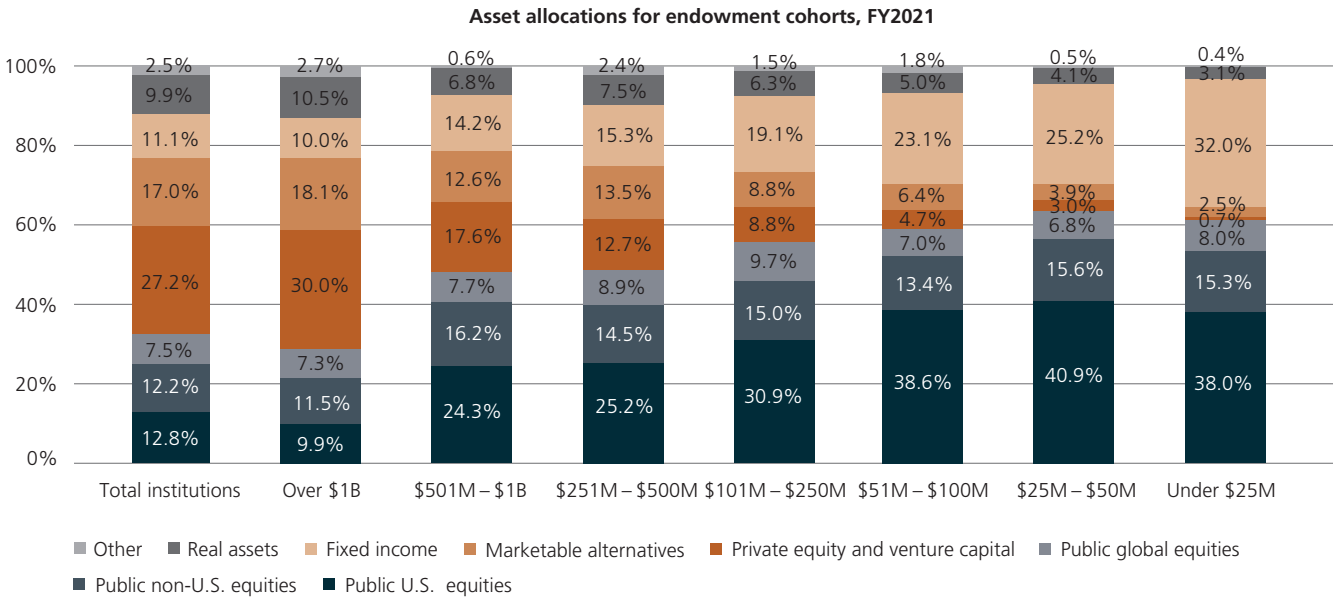
Chart 6: net annualized average returns



Source: 2021 NACUBO-TIAA study of endowments

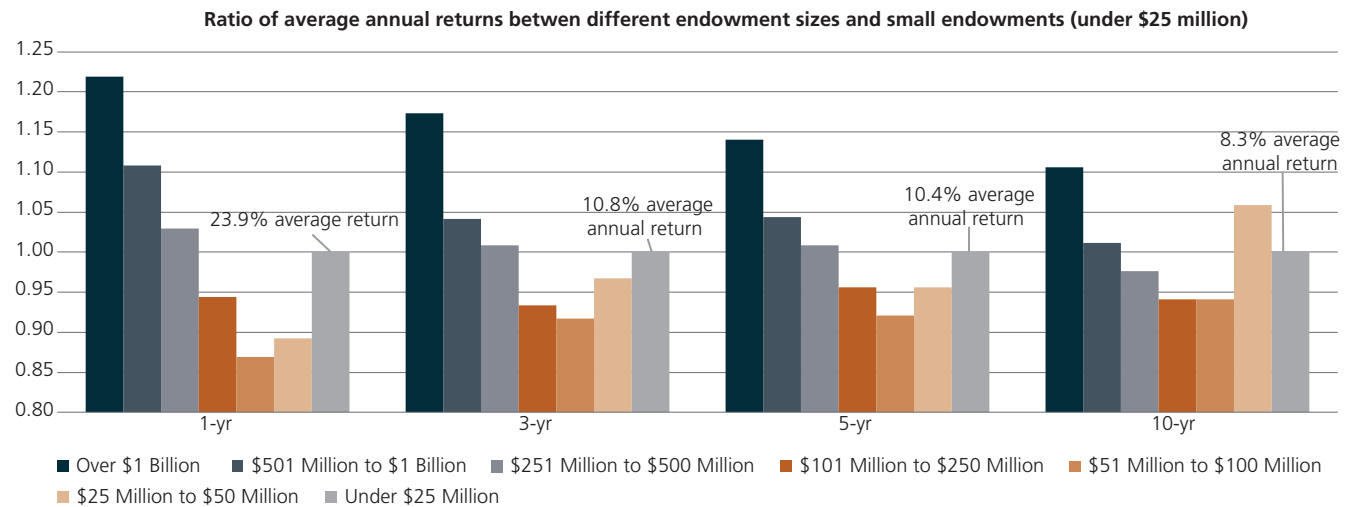
Results are not uniform across endowments and the data shows a wide dispersion of asset allocation choices and overall return outcomes. Chart 7 shows that larger institutions tend to allocate to alternative investment strategies in general, and to private market assets in particular to a higher degree than smaller institutions. This fact partially explains what is shown in chart 8, namely that larger endowments have been able to generate higher average returns than their smaller peers.

Chart 7: asset allocation of endowments



Source: 2021 NACUBO-TIAA study of endowments

Chart 8: performance dispersion of endowments



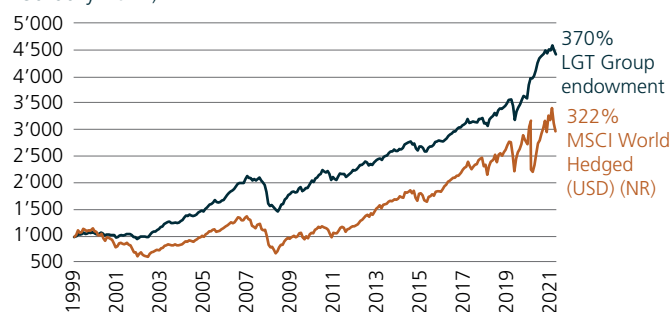
Source: LGT Capital Partners and 2021 NACUBO-TIAA study of endowments

Part 2: LGT Capital Partners' history in managing the LGT Group Endowment

When LGT sold significant parts of its asset management activities (the companies were called GT Global and Chancellor Asset Management) to Amvescap in 1998, the proceeds of roughly USD 1 billion were retained to establish the LGT Group Endowment Fund. After detailed analyses and several rounds of discussions with internal and external experts, it was decided to follow the approach of North American endowments described in part 1. This meant a focus on broad and global diversification coupled with a long-term investment horizon and the implementation of the before mentioned investment principles. The investment objective was set to achieve equity-like returns over a full market cycle, albeit with much lower volatility. More specifically, the portfolio's ex ante volatility was set to not exceed 10% p.a. and the limit of its downside equity beta in strong bear markets was set at 0.5. Whereas initially only the endowment's capital was invested, the strategy was opened up to external investors later on and has grown to over USD 18 billion today.

After more than twenty years and many refinements of asset allocation and investment strategy, the main investment objectives remain largely unchanged. They also have been met over the several market cycles including the bursting of the dot-com bubble in 2000 and the global financial crisis in 2008. The performance of the endowment strategy since inception in 1999 has exceeded global equity markets and this result has been achieved with substantially lower volatility compared to the overall market index, the MSCI World Index.

Chart 1: LGT Group Endowment vs. MSCI World Index with numbers p.a. (overall return, volatility) (31 December 1998–28 February 2022)

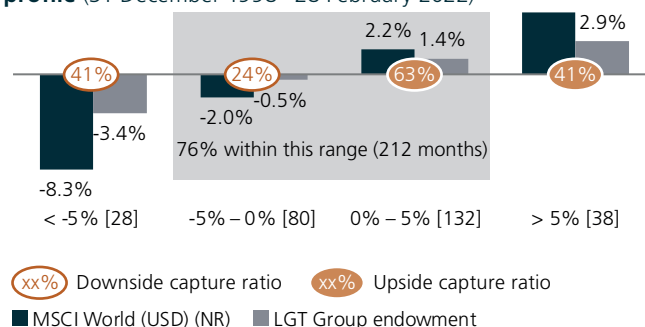


Source: LGT Capital Partners, Refinitiv.

In addition to the mere risk/return statistics, it is important to understand how returns have been achieved. Broadly diversified and well managed endowment portfolios show superior upside/downside capture rates that lead to strong compounding of returns as displayed in the chart below. In normal months of global equities performance, defined as returns between -5% and +5% per month, the endowment portfolio has generated almost two thirds upside capture but only a quarter downside capture. Approximately 2/3 of all monthly returns were in this range.

In months with higher volatility, which occurred less than a quarter of the time, both the upside and the downside capture has been at approximately 40%. This shows the limitation of a stable, long-term asset allocation while maintaining a strong overall participation in equity market uptrends.

Chart 2: LGT Group Endowment long-term risk/return profile (31 December 1998–28 February 2022)



Source: LGT Capital Partners, Refinitiv.

LGT Group endowment net of 0.00% p.a. management fee and 0.00% p.a. operations fee is not available to external investors. **Past performance is not a guarantee, nor an indication of current or future performance. Returns may increase or decrease as a result of currency fluctuations.**

Part 3: Core investment principles

For us at LGT Capital Partners, the core investment principles of the endowment model are as valid as ever in today's market environment. During our development from a family office to a global asset manager, we reaffirmed our commitment to endowment-style investing time and time again. Naturally, the approach also evolved during the years along with financial innovation and pertinent market trends. Today, we define the core investment principles of the endowment model as follows:

1. Growth-oriented multi-asset portfolios with a long-term investment horizon

The LGT Group Endowment stands for a portfolio seeking superior risk-adjusted returns over the long-term. The investment strategy focuses on growth opportunities and attractive yields and commits capital over an extended period of time to illiquid private market investments and alternative investment strategies, among others. This allows us to harvest additional, non-traditional risk premia and to withstand intermittent market volatility.

2. Unconstrained global investable markets' approach with the inclusion of illiquid private market assets, alternative investment strategies and emerging asset classes

Our investment universe is unconstrained, meaning the whole array of global investment opportunities is considered and the portfolio is broadly diversified across risk factors, asset classes, geographic regions, industry sectors and investment styles. New investment opportunities are continually analyzed seeking

to identify their merit if added to the existing portfolio. In the past, we have selectively added emerging, innovative asset classes whenever we concluded their integration would enhance the overall risk-/return-profile of the portfolio.

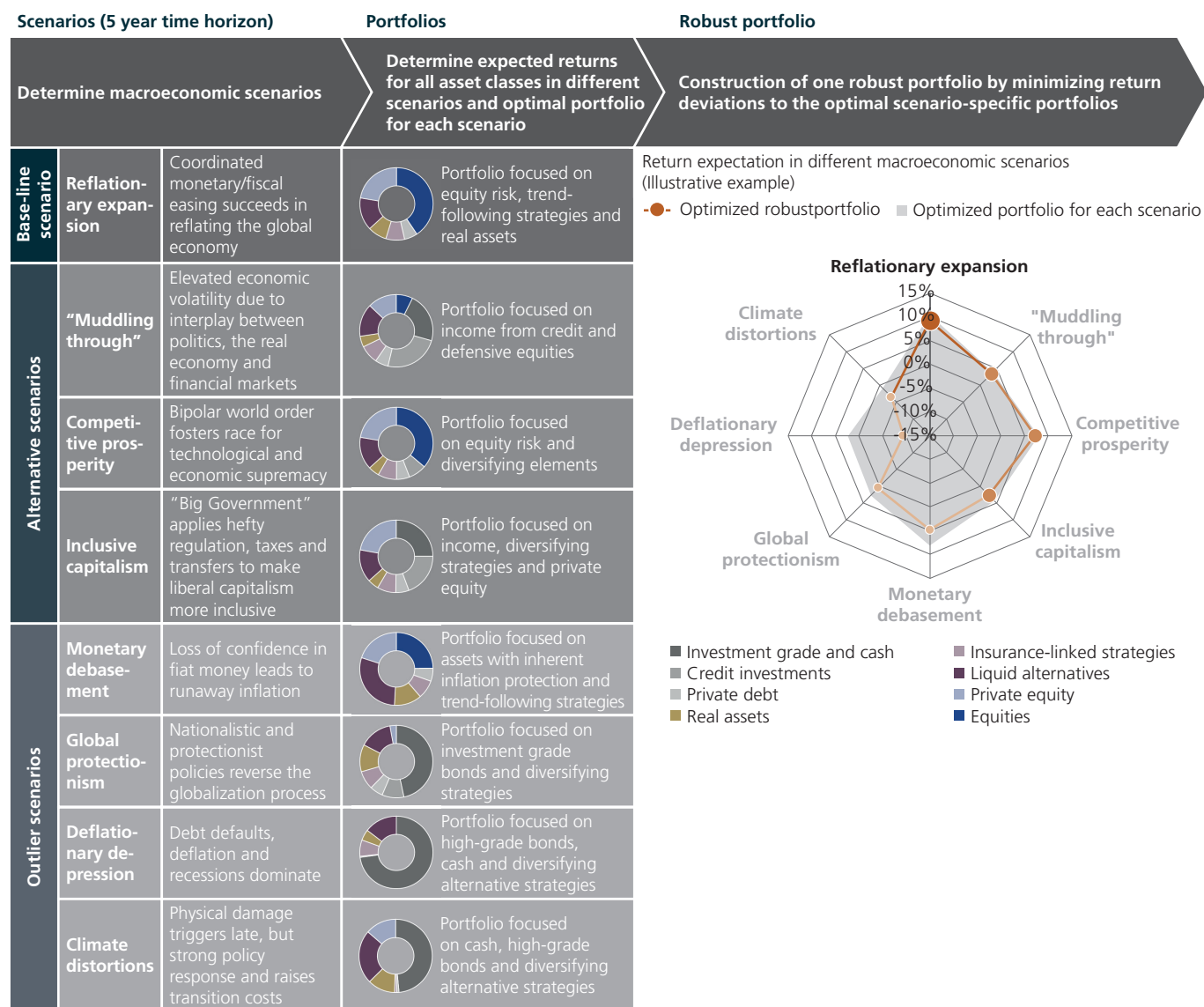
3. Scenario planning methodology to ensure robust strategic asset allocation

When defining the strategic asset allocation, we apply a forward-looking scenario planning approach which helps us to deal with uncertainty and allows for various future paths and outcomes of the global economy and financial markets. Thus, we do not solely rely on history to guide us and neither do we pin our hopes on single-point forecasts. Instead, our own methodology's aim is to ensure that our long-term investment portfolios are robust with regards to the various scenarios that could unfold in the years ahead.

The table below shows our current scenario framework which we use for the next 5 to 8 years, but the set of future paths is regularly revisited to incorporate major new developments.

The chart shows the asset allocations which are optimized for each particular scenario. However, these are theoretical allocations only. The LGT Group Endowment's actual strategic asset allocation is a carefully weighted combination of all these portfolios as we expect the real world to be a weighted combination of these scenarios, as well. The key goal of an optimal combination is to make the allocation robust regarding the various possible future paths.

Chart 1: Scenario-based robust portfolio construction



Source: LGT Capital Partners

4. Optimal portfolio diversification on a look-through basis (risk factor approach)

Optimal diversification is key in seeking superior risk-adjusted returns. Therefore, we use a risk factor-based approach to dissect, monitor and adjust our exposures to key investment risks. This approach views each asset class as a compilation of generic risk factors and it decomposes them to attain the full look-through on a portfolio level.

The graph below shows the actual risk decomposition of the LGT Group Endowment. In this chart, the sum of risk factors from various asset classes is first tallied up and then, in a second step, reduced by the diversification effect to arrive at the overall ex-ante portfolio risk.

5. Value enhancement through best-in class selection of active managers, a tactical asset allocation process, and a systematic framework for anti-cyclical value opportunities

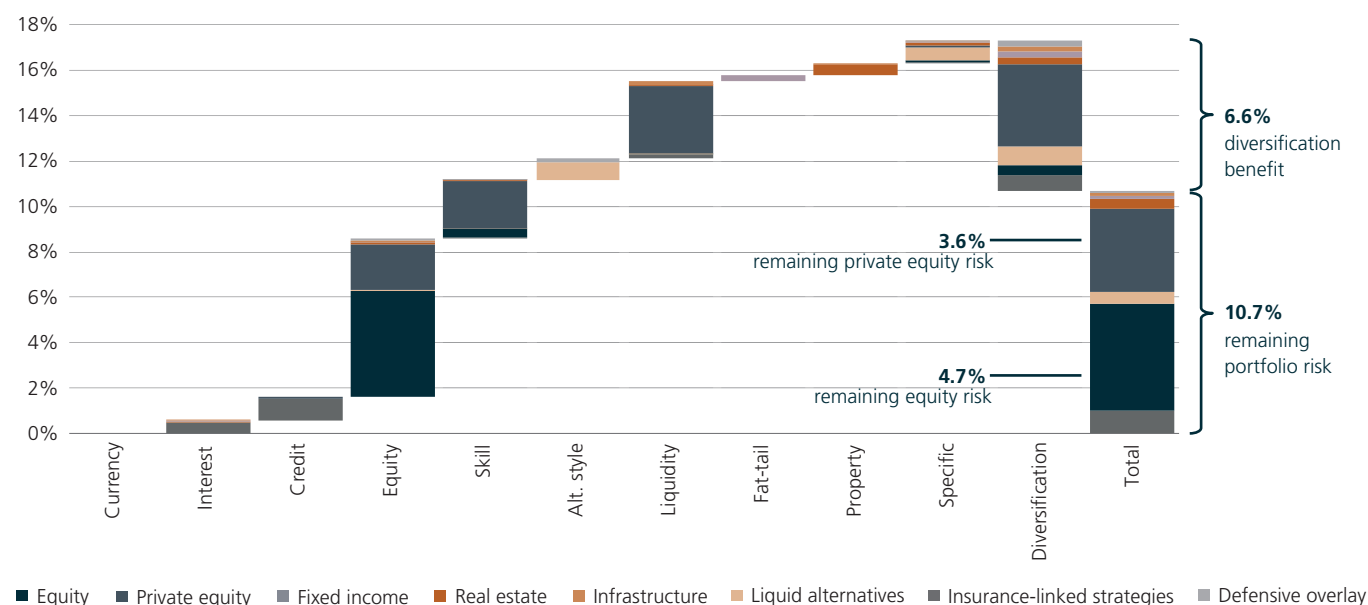
We do not assume financial markets to be fully efficient and therefore firmly believe that active investment management can add value. Best-in class managers are selected based on their proven ability to generate above-average returns with

their individual, research-based security selection process. Additional value can be delivered on the asset allocation level as long-term trends are typically not smooth and as a result, short-term dislocations tend to offer return opportunities. The strategic asset allocation is therefore complemented by a more tactical overlay, both discretionary by a team of investment strategists and responsible portfolio managers, as well as a systematic process to capture anti-cyclical value opportunities if and when they occur.

6. Efficient implementation through a thorough and continued cost-benefit analysis

As for the implementation of investments, we believe there is a balance between tapping into alpha capabilities of exceptional managers and accessing pure market exposures in a cost-efficient manner. Active managers are carefully selected and mandated in areas where they can generate non-market-factor returns, meaning if their skill is visible in the return streams they produce. In other segments, low-cost passive solutions are preferred. For this, we strive for full transparency on underlying value drivers by bringing our external managers onto our proprietary managed account platform.

Chart 2: risk decomposition



Source: LGT Capital Partners

7. Integrated sustainability/ESG considerations over the entire investment process

Sustainability has been on top of our agenda since the beginning of the LGT Group Endowment. Therefore, and driven by the values important to our shareholders, long-term planning at LGT Capital Partners has always involved thinking in terms of generations and financial return ambitions have always sided with goals to positively impact society and the environment.

Today, sustainable investing has become mainstream in the asset management industry. Integrating Environmental, Social, and Governance (“ESG”) considerations across the entire investment process is not only the responsible and undoubtedly “right” thing to do as a corporate citizen, but also essential in the quest for superior risk-adjusted returns. Therefore, sustainable investing is as much about avoiding major risks (e.g. of holding stranded assets) as it is about engagement striving to improve ESG integration (e.g. communicating our values and requirements to management

of portfolio companies) and as it is about capturing future growth opportunities (e.g. by investing into sustainable innovation). For that purpose, the LGT Group Endowment has implemented a comprehensive ESG-framework (see chart 4) which encompasses minimum standards and exclusions, a broad ESG integration, an engagement and a climate action strategy to align the portfolio with the goals under the Paris Agreement.

8. Strong alignment of interest

Originally set up to manage part of the wealth of the Princely Family of Liechtenstein, today, the LGT Group Endowment, its owners, and key investment professionals are all substantial investors in the portfolio, as well. Together, we have a total of more than USD 3 billion of our own capital invested alongside our clients. This guarantees a strong alignment of interest. In addition, we also ask the same of our external managers and lay great emphasis on their own commitment to funds they manage for us.

Chart 3: ESG framework

Mission statement: We strive to become a leader in ESG amongst our peers through (1) the integration of ESG factors at all levels of the investment process, (2) the alignment of the portfolio with the 2-degree scenario of the Paris Climate Agreement, and (3) by taking an active role in promoting ESG integration in the investment community.

ESG integration approach

Exclusions	<ul style="list-style-type: none"> Group-wide exclusion of companies related to controversial weapons and thermal coal Structured approach to identifying potentially sensitive industries and conduct
ESG integration	<ul style="list-style-type: none"> Broad ESG integration on all decision levels¹ and across all asset classes Security selection based on ESG scoring using proprietary tool and integration of ESG controversies Manager selection combining top-down process assessment with bottom-up position scoring
Engagement	<ul style="list-style-type: none"> Active ownership in direct equity and fixed income strategies Engagement with managers on best-practice Knowledge sharing and participation in industry networks
Monitoring and reporting	<ul style="list-style-type: none"> Ongoing monitoring of managers and companies (e.g. scores, carbon footprint, controversies) ESG committee² as forum to discuss ESG-related issues and developments Transparent reporting including biennial report on how we integrate ESG in the Princely Strategy

Source: LGT Capital Partners. The Princely Strategy follows the same investment approach to that used for the Princely Family of Liechtenstein. The investments underlying this strategy do not take into account the EU criteria for environmentally sustainable economic activities.

¹ Decision levels: asset allocation, manager selection and security selection.

² LGT Capital Partners’ ESG committee comprises twelve members of different business units. The ESG committee and its subcommittees coordinate the development of ESG-related policies and procedures across investment management, reporting and client service.

Part 4: Benefits, challenges and lessons learned after more than 20 years of endowment management at LGT Capital Partners

Overview

In our view and as outlined before, the main benefits of a portfolio's overall long-term asset allocation is access to a diversified set of return drivers and a robust portfolio construction resulting in superior risk-adjusted returns. Adding new and fundamentally uncorrelated asset classes and strategies like insurance linked investments improves the overall robustness of the portfolio. In addition, clearly predefined tactical asset allocation decisions add their own value. More specifically and during periods of market turmoil, anti-cyclical investment decisions have been able to add value, as well.

In addition to regular challenges in asset allocation like estimates of future asset class returns and correlations, there are other challenges when dealing with alternative asset classes. Historical returns may not be readily available, not normally distributed, or only available with a time lag. This requires the development of specific models that include alternative risk factors such as for example (i)liquidity, alternative style factors, fat tails and on top of it, expert judgement when taking asset allocation decisions rather than purely relying on quantitative results.

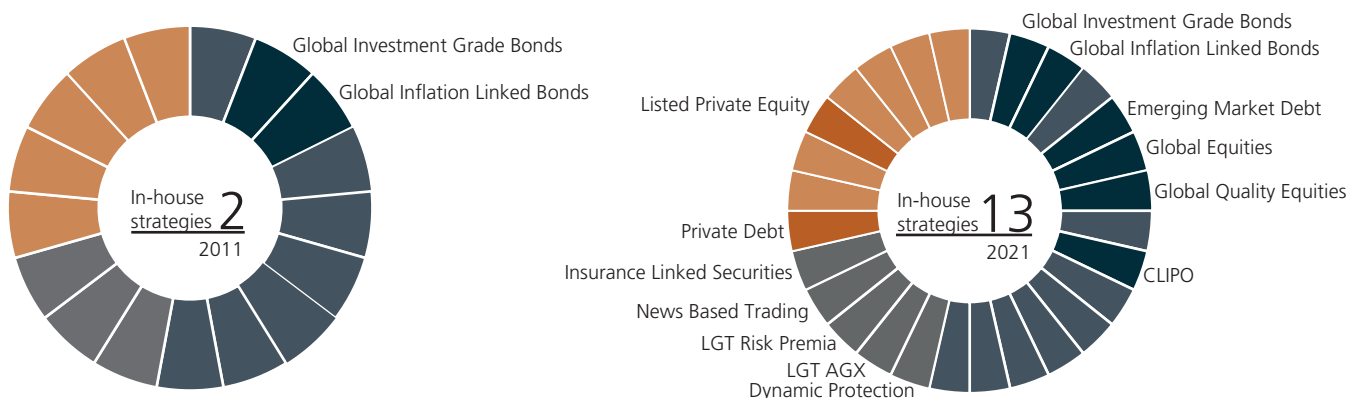
When it comes to tactical asset allocation, we believe in measured tactical timing of liquid asset classes by a core group of investment professional rather than a single guru, supported by a variety of inputs from economic, market and manager data. We are also strong proponents of countercyclical investing and hence tend to invest into assets and asset classes after significant drops in value. Typically, after such market events risk appetite and portfolio liquidity tend to be limited and therefore, we developed and successfully implemented an "anti-cyclical value opportunities" framework, which was implemented after the great financial crisis in 2008/2009. This framework addresses the psychological issues mentioned above by setting clear investment value thresholds and by providing for the necessary liquidity. We currently constantly monitor 12 sub-asset classes for signals of value for a potential counter-cyclical investment.

Another important issue in implementing the asset allocation is the choice of instruments. The main considerations here are performance or potential for alpha and cost. As mentioned before, we see value in active management and therefore, almost 90% of the LGT Group Endowment is invested in actively managed strategies either through “best in class” managers or directly managed strategies. In order to reduce cost, we have reduced the allocation to external managers and shifted to direct strategies managed by our own, internal

teams which currently amount to almost a third of the portfolio. In our view, it is key to identify the right balance between optimizing cost and allocating to external managers. A one-sided focus on cost alone would come with substantial opportunity costs in terms of forgone performance, while allocating the full portfolio to external managers – the so-called “OCIO (Outsourced Chief Investment Officer)” model – would fail to exploit the full potential of internal investment teams and therefore, it would lead to a sub-optimal cost-drag.

Chart 2: increased allocation to direct investment strategies

Evolution direct strategies:
Adding to historical expertise in traditional asset classes to alternative direct strategies



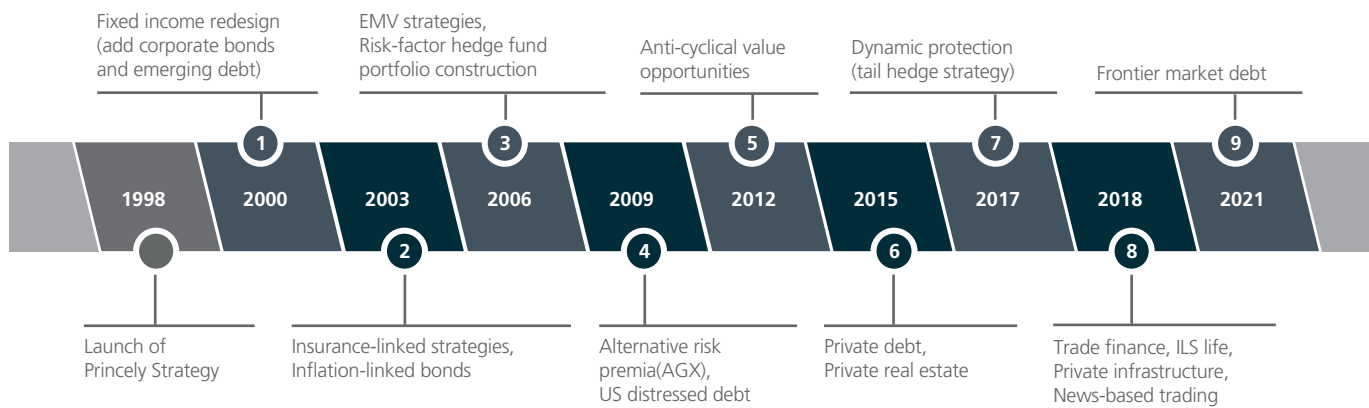
Private markets **Liquid alternatives** **Specialized equities and fixed income**

- Leverage in-house experience and skill set in traditional and increasingly also in alternative and private markets direct investments
- Advantage to customize mandates with internal teams with respect to benchmarks, overlays and attractive fees
- More transparency and active engagement to align allocation with desired ESG score and climate action targets

Source: LGT Capital Partners

Another important factor has been the continuous development and evolution of our asset allocation strategy the implementation of a systematic and dynamic protection strategy allowing the portfolio to maintain sufficient levels of equity exposure and to meet the downside beta objective at the same time.

Chart 3: continuous evolution of asset allocation



Source: LGT Capital Partners

LGT Group Endowment was launched on 31 October 1999.

Private Equity

Private market strategies in general and private equity investments in particular have been significant return drivers over the years. In addition to the illiquidity premium investors access with such investments, one of the major benefits of private equity is the direct value added by different operational and financial levers applied to the underlying portfolio companies. Whereas a public equity investor can invest, divest and perhaps engage as an activist investor in case of a substantial investment, private equity investors have a much larger toolkit and can change the underlying company's strategy, make operational improvements, change or incentivize the leadership, re-organize the company, use financial instruments or drive mergers and acquisitions to name a few. This leads to a wide array of value-add activities and as a result, to a large dispersion of returns between different private equity managers. It is important to mention that in private equity, it is not sufficient to invest in the average performance of the asset class but access to the top quartile firms is needed to achieve the net risk-adjusted returns targeted.

Getting access to the funds of top-tier private market managers gets ever more difficult and requires deep and thorough networks with established firms but also cautious early investments into younger start-ups or spin-offs. Many top private market funds are capacity constrained and investors need to leverage their relationship and reputation to get an allocation in newly raised funds. In addition, a thorough due diligence and the continuous review of strategies and potential new teams are of key importance. This all requires deep and broad analyst teams with succinct industry knowledge in many different sectors as well as long-standing relationships.

Another benefit of private market investments is the low correlation of their return streams to traditional equity and fixed income markets as well as the concept of committed capital. This allows the underlying private equity managers to implement their strategies with available "dry powder" and to call investors' capital whenever opportunities arise and independent of the general market situation. As a consequence, the illiquidity of private market funds also limits the end investor's ability to redeem at a potentially wrong point in time and enables the investment manager to invest anti-cyclically.

There are additional operational complexities for private market investors. When investing in private markets, a clear capital commitment strategy has to be devised in order to manage the J-curve of capital being called. It takes careful and ongoing cash flow planning to get the capital invested and to later manage capital calls and distributions in order to keep the desired investment degree.

The main lessons for superior private markets performance and to securing access to best established and younger managers, is to maintain a relative stable commitment pace over time and to balance the portfolio well across regions, sectors and investment stages. In order to increase performance and to reduce cost, allocations to secondaries and co-investments are beneficial as well. In this context, it is important to emphasize the value-add of a successful secondaries strategy which requires established relationships, established processes, deep knowledge and data about the underlying investments to be able to successfully participate in a bidding process for such investments.

Finally, the management of investment capacity is another key aspect to consider. When analyzing the quality of a specific manager, investors have to evaluate whether the capital raised does not dwarf the opportunity and therefore, many funds limit the capital they are willing to accept in order to not dilute performance. This again causes access to top-tier managers to be challenging and a key consideration at the same time.

Liquid Alternatives

Liquid alternative investment strategies' main goal and benefit is to generate excess risk-adjusted returns which are beyond what can be explained by the underlying risks they take. Like private market managers, they have large degrees of freedom, including applying short selling, leverage, derivative strategies etc. As a result, these strategies typically have low correlations to traditional market factors like equity, interest rate or credit risk and product return streams which tend to be uncorrelated with returns generated by traditional long-only approaches.

The performance dispersion between such strategies tends to be high and not necessarily stable. Many managers pursue complex strategies that require detailed knowledge from investors to conduct thorough due diligence. Like with private equity but not to the same extent, it is important to get access to top-tier managers as many of them are capacity

constrained. Therefore, an experienced, global team with deep strategy knowledge, a global network of relationships and a high reputation are key to build a portfolio of liquid alternative investment strategies.

In addition, there might be limitations in terms of transparency, risk management, operational control and other risk factors to consider. In order to address such concerns, we often use managed accounts to implement such investment strategies. This not only substantially reduces our counterparty risk it also comes with the benefit of full position-level transparency on a daily basis. This allows us to monitor the portfolio, for example with its illiquidity, concentration, and other risk statistics, but also to better understand the manager's investment strategy, portfolio and risk management capacity. In addition, the full operational control of our proprietary managed account platform allows us to exit or sell securities of our underlying managers in case risk management parameters are violated.

Cost is another important consideration. While we are prepared to pay for above-average returns, we try to reduce expenses where possible. This includes negotiating fair and appropriate incentive structures, ideally based on alpha generation. But it also applies to reducing trading costs. For our proprietary managed account-platform we constantly negotiate with our counterparties or even undertake actions like maintaining seats on exchanges to reduce execution costs.

One of our major lessons learned in liquid alternatives has been the importance of reducing traditional beta exposure in our strategies, or in other words to only pay performance fees on excess performance or alpha. Many liquid alternative investment strategies run significant market betas and as a result, tend to get paid for investing into traditional market risks for example during bull markets. Investors can access such beta performance at substantially lower fees and the managed account platform allows us to implement bespoke mandates with our managers which eliminate or reduce market risks and as a result, focus on alpha generation. This is the most efficient way for us to invest the fee budget of the endowment.

Alternative Income

Many of the lessons in private equity also apply to other private market asset classes like private credit, real estate, infrastructure and insurance linked investments where investors can get access to differentiated and uncorrelated income streams.

In alternative credit, it is important to analyse whether "real" illiquidity premia are earned, as private market premia might be too low for the risks and illiquidity accepted by the strategy. In order to avoid such sub-optimal investment strategies, we tend to favour focused and opportunistic investment strategies which allow its managers to fully exploit their return potential. The same applies to real estate where our main focus is on value-add and opportunistic as well as smaller and mid-sized opportunities and managers. We also maintain the flexibility to shift between public and private exposure, in particular when public valuations are attractive relative to private markets. For private real estate as well as infrastructure we complement core primary investments with secondaries and co-investments to enhance performance and reduce costs.

Insurance linked securities generate an income stream which tends to be fundamentally de-correlated to financial markets and which depends on the occurrence of natural disasters or life insurance events. We have invested into this asset class since 2003 and built experience in assessing whether insurance risks are well priced and whether we have access to interesting niche strategies either through our direct, internal investment team or through a range of specialized external managers.

In summary, we continue to maintain and to constantly improve a robust and well diversified strategic asset allocation. We also seek access to strategies which are actively managed, including measured tactical decisions and anti-cyclical investments as well as active manager selection. We are keen to continue to source and secure capacity with best in class managers and are prepared to pay for above average risk-adjusted returns.

We continue to manage investment and operational complexities with dedicated resources and strategies. Finally, we continue to improve cost-efficiency through a variety of measures, including utilization of direct and passive strategies, implementing appropriate incentives and reducing costs where not dilutive to performance.

Part 5: Focus on the continued importance of Private Markets and Liquid Alternatives in the current environment

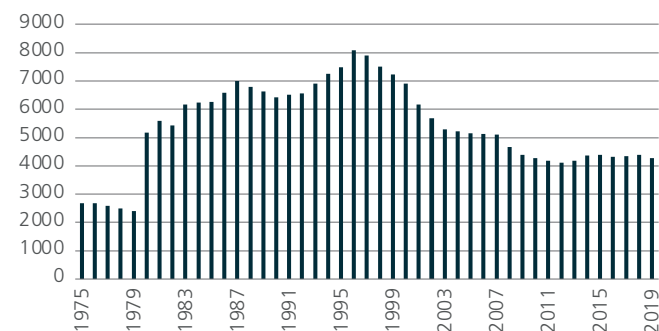
Both private market investments and liquid alternatives have consistently been the distinguishing feature of endowment-style investing. While the former have set impressive records over many years, the latter are just about to end a difficult decade of underwhelming returns. As a special focus topic at the end of this paper, we would like to address the question whether these two asset classes are likely to continue to play a leading role in an endowment portfolio and to what extent they are likely to retain their ability to generate above-average returns for investors.

Private Markets

Private markets refer to a wide array of investments spanning from venture, growth, and buyout capital to secondaries, co-Investments, and private credit. All of these segments have experienced tremendous growth which naturally brings about worries of a potential set-back and the ability of such strategies to sustain their extraordinary performance. While we recognize that some of the return drivers are cyclical in nature, we continue to expect strong performance provided we remain highly selective investors. Below we discuss some evidence supporting this expectation.

There is a structural substitution between private and public capital. Deregulation in the mid-1990s made it easier for companies to obtain private capital while public capital has been facing an increasing regulatory, reporting and disclosure burden. This contributed to the steady decline of the number of listed companies (see Chart 1). At the same time, institutional investors increasingly participate in private fundraising rounds ensuring a steady supply of capital (Chart 2: dry powder).

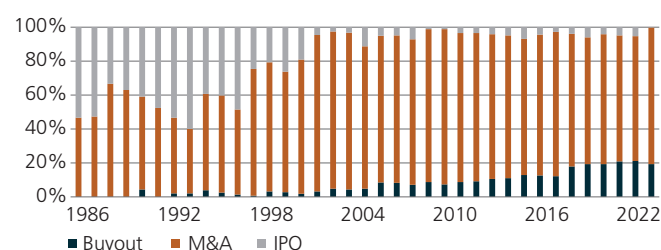
Chart 1: number of domestic companies listed on U.S. stock exchanges



Source: Worldbank

Companies prefer to stay private. IPOs are no longer the preferred exit route for venture-backed companies (see chart 3). The long-term nature of private capital allows companies to improve fundamentals rather than focus on short-term objectives like quarterly earnings. Also, companies benefit from specialized knowledge of their private equity partners allowing them to swiftly adopt best practices. This is especially true in high innovation sectors.

Chart 2: company exits via IPOs vs. M&A transactions



Source: Pitchbook, NVCA

Private ownership represents a superior governance model when compared to the diffuse ownership prevalent in public markets. Most public shareholders take a largely passive role because their stakes are not sufficiently large to incentivize in-depth research, monitoring of boards and the enforcement of control rights. Private investors, in turn, align with owners on long-term growth objectives as their incentive schemes are linked to fundamental improvements. This translates into a larger toolset available to the private equity manager (see Chart 3).

Chart 3: private vs. public market governance model

Public equity	Private equity
"Buy" decision	"Buy" decision
	<ul style="list-style-type: none"> The "deal" Purchase negotiations Structure Financial leverage New debt Restructuring Industry expertise Roll-ups Management control Incentives New management Strategic direction
"Sell" decision	"Sell" decision

Private equity competitive advantage

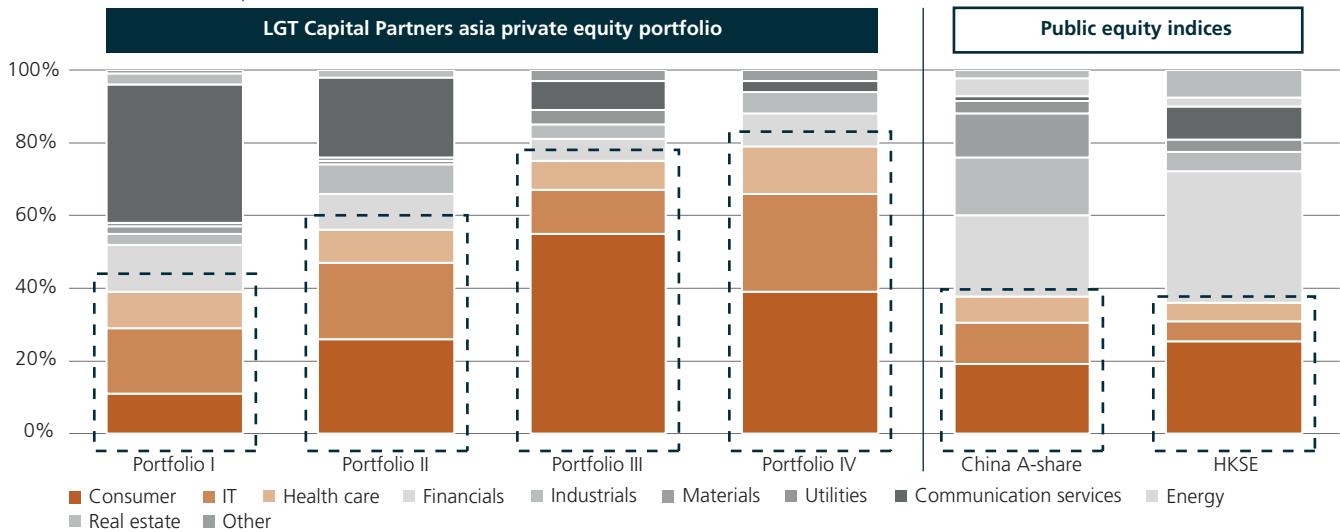
Source: LGT Capital Partners

Private capital targets high innovation industries. Public financing tends to occur later in the industry’s life cycle when companies have established a track record allowing them to be evaluated by outsiders. A private partnership develops deep inside knowledge of a company’s processes and value-add. As such it is in a better position to assess the value of intangible assets. Intangibles, in turn, play an increasing role in today’s value chains characterized by a higher level of skill, R&D, and IP content. This means that an increasing part of the value-add activities are conducted before a company enters the public domain (if ever). As an example, compare the sector composition of private vs. public equity in a relatively young market like China (Chart 4). Note: the Shanghai Stock exchange (re-)opened only in 1990.

Entry valuations have increased as a consequence of the fiscal and monetary expansion and are bound to revert modestly as the rate hike cycle unfolds. Chart 5 compares entry valuations of buyout deals against EV/EBITDA multiples of the public market. We see that the gap has widened in the U.S. It also illustrates that public market exuberance is only partially transmitted to private markets. Also, it should be noted that multiple expansion accounts for only a quarter of the sources of return, the other sources being operation improvements (EBITDA growth) and debt pay-down (de-leveraging). Finally, the opportunity set for generating alpha through fund selection vastly exceeds the one available for public investments (as shown in Chart 5 of part 1).

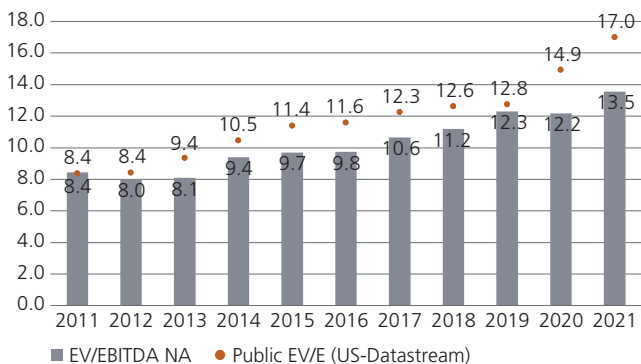
Chart 4: sector composition of private vs. public equities

% of total NAV or market capitalization



Sources: Bloomberg, LGT Capital Partners

Chart 5: median EV/EBITDA valuations in North America



Source: Buyouts from LGT CP internal transaction database, AVCJ, MergerMarket, Pitchbook, Preqin; Public Data from Refinitiv/Worldscope

Past performance is not a guarantee, nor an indication of current or future performance. Returns may increase or decrease as a result of currency fluctuations.

In summary, we expect private markets to build on its strong governance model, long-term investment horizon and larger opportunity set for skilled managers. It is important to mention that selection remains key in this high value-add asset class. Moreover, the market continues to evolve and so do we (Chart 6).

Liquid alternatives

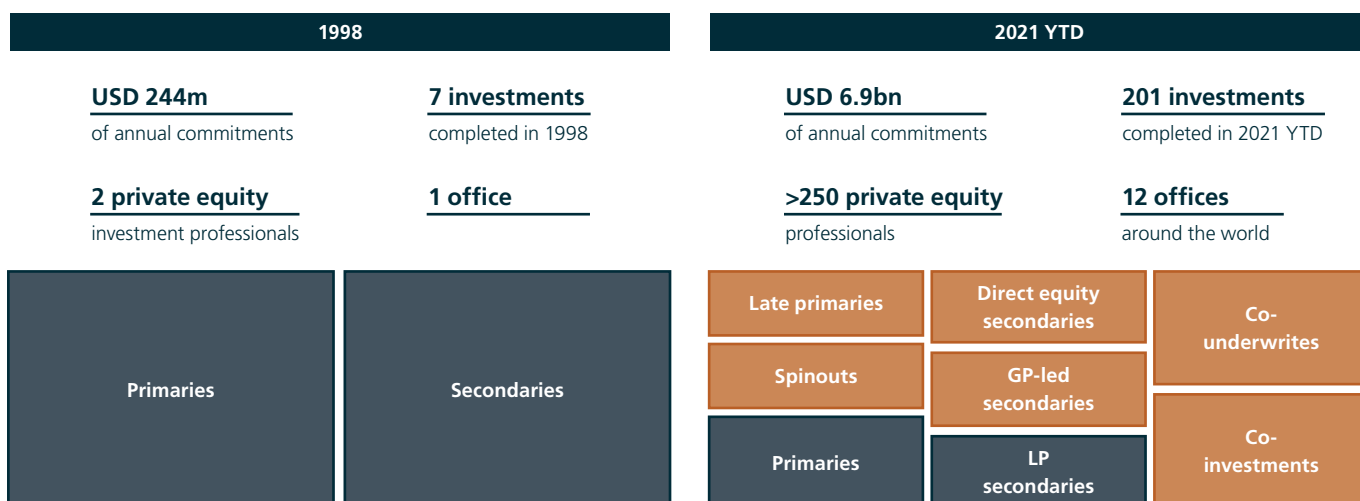
Liquid alternative investment strategies or hedge funds represent a much less obvious investment case given their lackluster performance as an asset class over the years following the last financial crisis in 2008/ 2009. We argue that liquid alternatives have been and continue to be an important constituent of an endowment portfolio and that their role is strengthened in today's market conditions.

Firstly, hedge funds can access a variety of asset classes and instruments not available to traditional investors, such as commodities, derivatives and other non-traditional instruments. Secondly, they apply a variety of value-adding

strategies able to generate performance irrespective of general market direction. Such strategies include long/short strategies in different asset classes, arbitrage strategies across different instruments and markets, derivatives trades and other sometimes complex strategies. All these approaches are of particular interest in the current market environment.

However, several pitfalls with liquid alternatives must be addressed to get the desired results. Most importantly, transparency and overall control are key. In order to understand the strategies and the inherent portfolio actions, investors need transparency to get comfortable with alpha generation capabilities as well as the risk management of the underlying funds. For more than fifteen years we have implemented such investments on a proprietary managed account platform whenever possible. This allows us to get full position-level transparency as well as operational control. In the worst case, the platform allows us to sell all positions and trades or to exert risk management actions when risk parameters are violated.

Chart 6: evolution of LGT CP's private equity capabilities



Source: LGT Capital Partners

Performance data net of all fees, expenses and carried interest charged by underlying funds, gross of LGT CP fees (as of 30 September 2021); includes all private equity primaries, secondaries and co-investments (including separately-managed accounts) that closed between 1 January 2021 and 30 September 2021. The track record does not represent an experience of any one investor and is shown for illustrative purposes only.

Past performance is not a guarantee, nor an indication of current or future performance. Returns may increase or decrease as a result of currency fluctuations.

Another pitfall has been the incentive structure coupled with the beta exposure of many strategies. With high management- and performance fees some managers earn fees on the beta or directional exposure of their portfolio and as a result, they may be incentivized to take undue risks. On the other hand, when performance is negative, managers have an incentive to close their business instead of waiting for performance fees to return and therefore, the survivorship bias in hedge fund returns tends to be substantial.

After more than 25 years of hedge fund investment experience, we have come to the conclusion that the liquid alternatives portfolio should only have minimal exposure to traditional risks in an endowment portfolio. This is because equity risk can be “exploited” more efficiently by above-average long only managers or by private equity managers within the endowment portfolio. This approach involves monitoring and steering the beta exposures of the managers and also a negotiation of the performance fee on alpha returns where possible. We combine market neutral or low exposure managers on the discretionary side with systematic managers that exploit different risk premia in areas like

quantitative equity or trend following. Whereas the expected returns of our hedge fund allocation are below what other investors expect from their allocation, we are comfortable with these numbers given they have been achieved with no or very low directional exposure which is a diversifying element in the overall endowment portfolio.

In addition, we believe the macro environment will be favorable for active strategies going forward. Such strategies faced significant headwinds in recent years as fiscal and monetary policies aligned their agendas in order to revive the market and steer through the various post GFC-crises. At present however, the course is set on policy normalization and a nominal growth path that will likely exceed the “new normal” that prevailed during much of the 2010 decade. From a macro perspective, a more self-sustained growth path means less intervention as a consequence, larger fluctuations of asset prices are more likely to occur as markets are expected to self-regulate through classical supply and demand dynamics. In more technical terms, this likely means higher longitudinal and cross-sectional volatility which both support liquid alternatives’ performance.

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