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Markets

FOCUS

14 September 2022

Within *Focus* we comment on extraordinary market events and analyse capital market related special topics.

The rising influence of target date funds on markets

The market structure has changed significantly since the global financial crisis.[1] Most recently, the share of pro-cyclical investment strategies has increased markedly thanks to the enormous growth of index funds and the advance of systematic strategies (e.g. Robo Advisor). However, with so-called target date funds, which invest anti-cyclically and follow a life cycle model, a counterweight is increasingly emerging – with three noticeable impacts on markets.

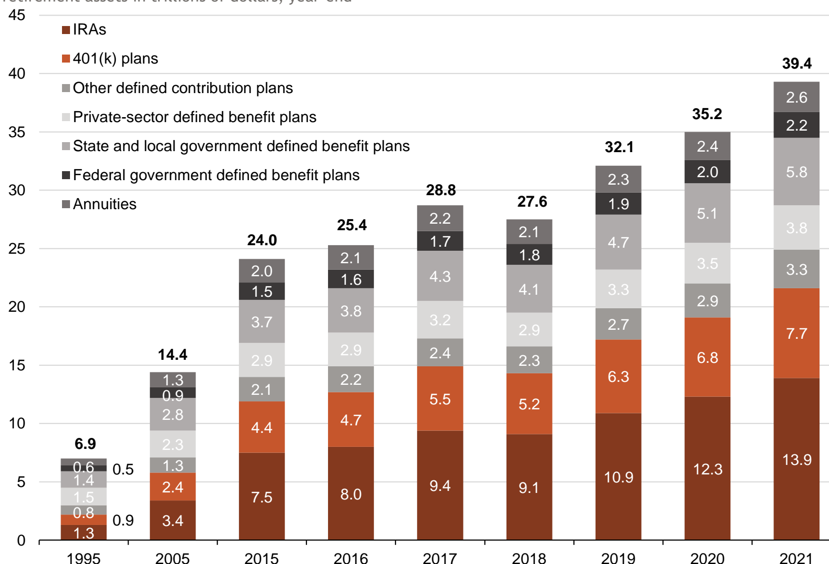
US retirement market now almost USD 40 trillion in size

Growth of the US retirement market has accelerated markedly over the past few years thanks to favourable regulation

One of the fastest growing markets in recent years is the US retirement market. Since 1995, the investment volume has increased almost six-fold, also favoured by the positive market development, so that by the end of 2021, the market stood for almost $40 trillion in assets under management (Fig. 1).[2] According to the Investment Company Institute (ICI), 63% of all US households own a tax-advantaged retirement plan. The reason for this is a favourable regulatory regime that allows independent saving for retirement in a tax-advantaged manner.

Fig. 1: US retirement market growth persists unabated

US retirement assets in trillions of dollars, year-end

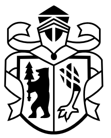


Time period: 01/01/1995-31/12/2021
Source: Investment Company Institute (ICI)

Target date funds – the most popular US retirement savings plan option

A 401(k) plan is an employer-subsidised retirement savings plan and with 20% market share of the US retirement savings market, the second largest retirement plan account type behind so-called IRAs (Individual Retirement Agreements), which are private accounts invested with a financial institution for retirement savings (see Fig. 1). 401(k) retirement savings plans allow workers to save and invest a

[1] See e.g. " Berenberg Markets – Focus "Passive Investments Change Market Structure and Market Behaviour", 5 May 2021.
[2] See Investment Company Institute, 2022: "ICI Factbook 2022".



portion of their paycheck in a separate account before taxes are withheld. Most 401(k) plans offer a wide range of funds that invest in equity, bonds and money markets. The most popular option is the **target date funds (TDFs)**. The concept of these mixed funds offers the advantage that they put together an age-appropriate combination of equities and bonds for the investor, based on the investor's expected retirement date ("target date"). In 2021, total assets in target-date strategies rose to a record $3.27 trillion, supported also by strong gains in many asset classes as well as a general rebound in investor contributions following the pandemic-related slump in 2020 (Fig. 2).

Target date funds become the most popular pension savings plan option

A key driver of TDF growth has been US pension policy. In 2006, US President George W. Bush signed the Pension Protection Act (PPA), which made it possible to invest in TDFs as Qualified Default Investment Alternatives (QDIA) in employer-sponsored retirement plans. Their ease of use made them the default option in most employer-sponsored 401(k) plans. Today, 90% of US employers offer TDFs as standard options in their retirement plans.[3] New employees who do not actively opt out of such a product thus automatically provide for retirement with TDF savings plans. TDFs were even mentioned first among investable QDIAs in the corresponding Department of Labor legislative letter.[4]

TDF growth was strongly supported by regulatory changes

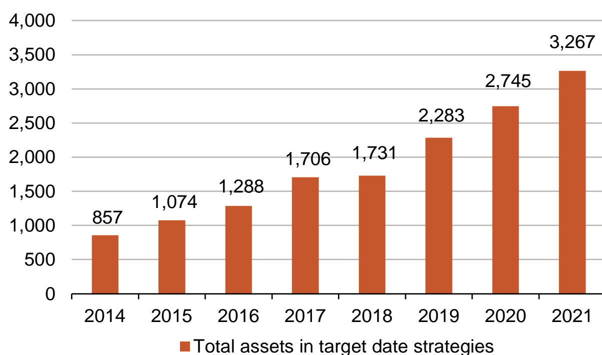
Age-appropriate asset allocation through simplicity of target date funds

For investors who are more than 25 years away from their target retirement date, a typical TDF holds 80-90% of its assets in diversified equity funds and the rest in bond funds. The bond portion then increases with age. About 20 years before retirement (e.g. 65 years), a TDF usually begins to shift the portfolio more strongly towards safer investments in order to achieve a roughly even distribution between equities and bonds by retirement. The so-called glide path indicates the asset allocation depending on retirement. Vanguard, the largest provider in 2021 with a market share of 36%, for example, adds inflation-linked bonds as inflation protection shortly before retirement age. At retirement age itself, the equity allocation is then further reduced towards 35% until the retiree is 72 years old. From then on, the asset allocation remains constant (Fig. 4). The age-appropriate portfolio of equities and bonds of the target date funds thus also indicates that the closer one gets to

TDFs allow for an age-appropriate asset allocation

Fig. 2: Assets under management of target date strategies increase…

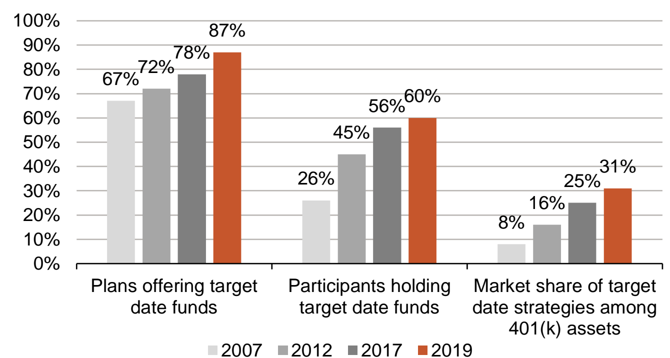
Assets under management in billion USD



Time period: 01/01/2014 – 31/12/2021
Source: Morningstar Direct

Fig. 3: … in line with the growing popularity of TDFs

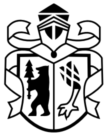
Share of total 401(k) market, in %



Time period: year-end period for 2007, 2012, 2017, 2019.
Source: ICI Research Perspective, "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2019."

[3] See Parker et al., 2021: „Retail Financial Innovation and Stock Market Dynamics: The Case of Target Date Funds“.

[4] See Utz, Miller, Kuhn & Eickman, LLC, 2008: „The department of labor’s final rules and supplemental guidance for qualified default investment alternatives“.



retirement age, the more conservative the asset allocation becomes in order to take account of the lower risk tolerance.

Asset allocation becomes more conservative in old age

Anticyclical rebalancing effect of the Target Date funds

In order not to deviate from the strategic asset allocation, which depends on the retirement age, the TDFs rebalance if there are major deviations from the target weights. If an asset class is performing well, it is reduced in order to keep the desired portfolio share constant and to bring poorly performing asset classes back towards the target weight. TDFs are thus counter-cyclical, unlike many other strategies that are gaining popularity. A simple analysis of the largest monthly performance differences between equities and bonds over the last five years shows impressively that there is a correlation between relative performance and flows in the equity index funds used by Vanguard TDFs. Larger inflows into the equity index funds occurred within large underperformance months of equities – particularly in March 2020 (Fig. 5). TDFs therefore helped stabilise the market during the peak of the Corona pandemic – as did pension funds and insurance companies, which also tended to rebalance their investments countercyclically.

Regular rebalancing of asset allocation means that TDFs act countercyclically …

… and thus help stabilise the market during market downturns

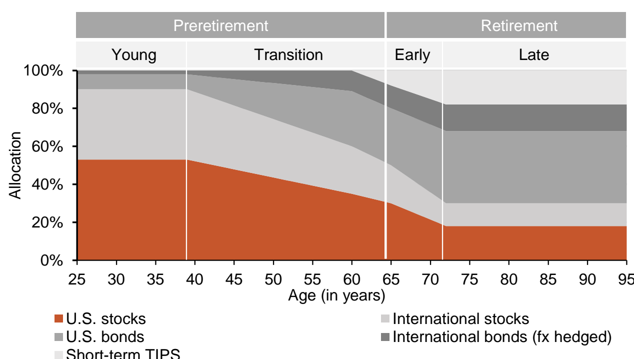
This knowledge can be put to good use. Rebalancing flows, large option expiries (unwinding of option traders' delta hedges) and Fed monetary policy actions encouraged us, for example, to countercyclically increase the equity allocation in our multi-asset mandates to an overweight in March 2020.[5] On the other hand, larger outflows in equity index funds used by TDFs tended to occur after stronger equity months – such as in April 2020, when US equities rose by more than 10%.

For the rebalancing flows, however, it is not the absolute development of equities that is decisive, but rather the relative performance of equities compared to bonds. If both asset classes rise or fall similarly, as seen in some cases this year, the relative weights change only marginally and the need for adjustment is relatively small. In Q1 2020, however, rebalancing flows were strongly supportive because equities had significantly underperformed bonds (Fig. 6). The (estimated) deviation of the actual allocation weights from the target weights was correspondingly large. Bonds had to be sold and equities bought in order to bring all asset classes back towards their respective target weights (Fig. 7). The larger the deviation from the target weights and the more funds managed by TDFs or similar strategies, the greater the effect on

Investors can take advantage of the anticyclical rebalancing effect

Fig. 4: Allocation gets more conservative with age

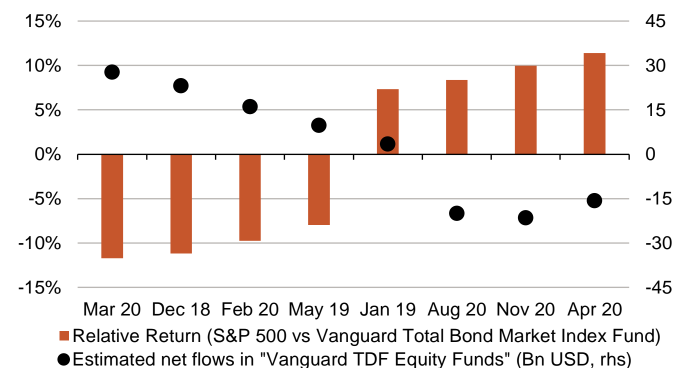
Glide path during the life cycle for Vanguard target date funds



As of: April 2019
Source: Vanguard

Fig. 5: TDFs help stabilise the market during market downturns

Relative performance of equities vs bonds and estimated net flows in Vanguard equity index funds used by Vanguard TDFs, top 4 & bottom 4 performance months



Time period: 31/07/2017-31/07/2021
Source: Bloomberg, own calculations

[5] See "Berenberg Monitor" publications of 30 March 2020" and 14 April 2020.

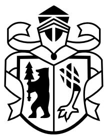
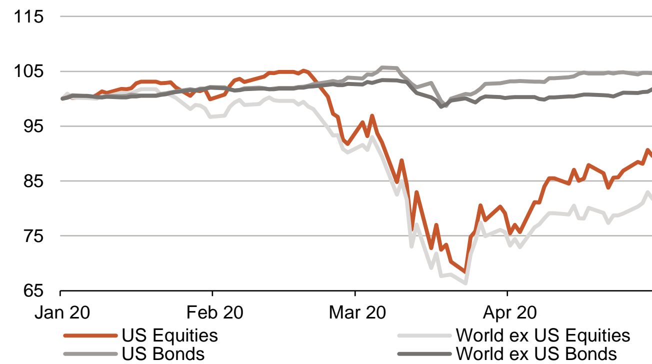


Fig. 6: Significant underperformance of equities …

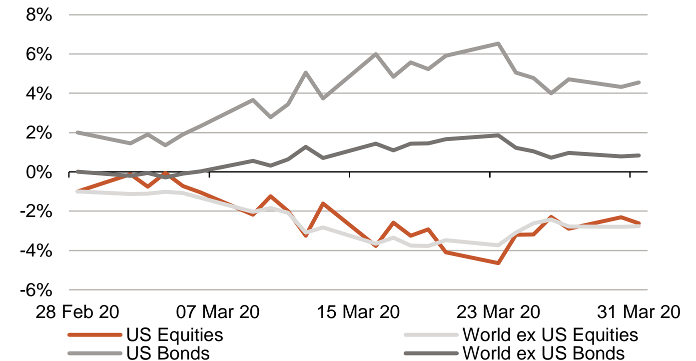
Development of global ex US and US equities and bonds; indexed to 100 = 01/01/2020



Time period: 01/01/2020-30/04/2020
Source: Bloomberg, own calculations

Fig. 7: … led to a strong shift in relative weights and thus to re-balancing flows

Estimated Target Weight Deviations for the Vanguard Target Retirement 2030 Fund



Time period: 28/02/2020-31/03/2020
Source: Bloomberg, own calculations

markets. It is therefore likely to become greater in the future if the assets under management of TDFs continue to grow strongly. The effect can be amplified by similar strategies such as 60/40 portfolios (strategies with a strategic equity weight of 60% and a strategic bond weight of 40%), should they rebalance at the same time.

Rebalancing effect greater for equities than for bonds

The rebalancing effect on equity markets seems greater than on bond markets …

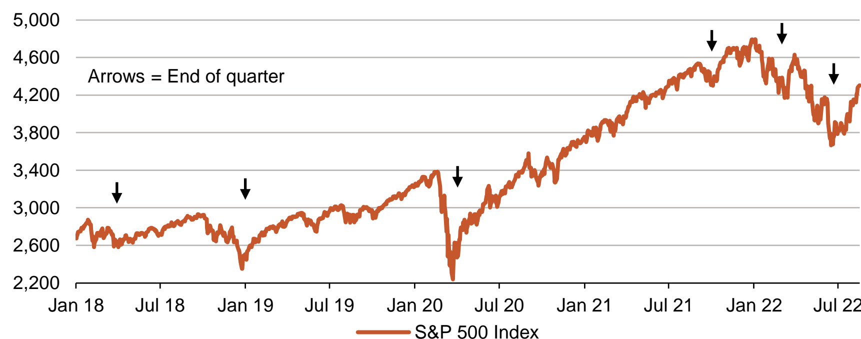
Interestingly, the rebalancing effect on equity markets seems to be greater than on bond markets. Towards the end of Q1 2020, for example, equities rebalanced up after the sharp sell-off, while bonds did not fall after outperforming. Often rebalancing flows are overshadowed by other events such as Fed meetings etc., so market movements can never be clearly attributed to one event. In other words: A strong relative divergence in the performance of equities versus bonds increases the likelihood of a rebalancing movement, especially in equities, but this is by no means certain.

… and often takes effect at the end of the month and quarter

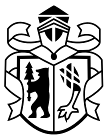
The fact that in recent years there has often been a positive development of shares at the end of the month and the quarter (Fig. 8) is likely related to an interplay of various effects such as option expiries, Fed meetings, savings plans and rebalancing effects. In particular, continuous passive "savings plan" inflows in the form of retirement savings have often acted as a stabiliser during crises. They ignore fundamental events such as pandemics, inflation or recession worries because they are automatically triggered at the push of a button, often with the salary check at the turn of the month. Savings plans for old-age provision only become critical when

Fig. 8: Frequent turning points in markets at the end of the quarter

Development of the S&P 500; black arrows = selected end of quarter



Time period: 01/01/2018-31/07/2022
Source: Bloomberg



unemployment rises significantly, because savings plans are then suspended or cancelled altogether – which is often the case during recessions.

Trends and side effects in the target date fund segment

Studies[6] also point to other characteristics, trends and side effects of the regulatory changes and the increasing relevance of target date funds.

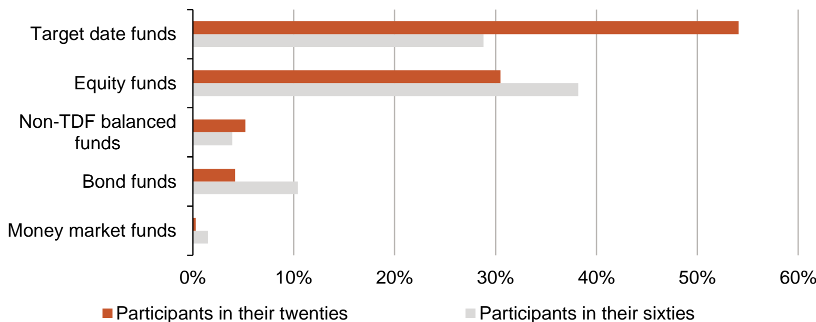
1. TDFs are particularly popular among the younger generations.

TDFs especially popular with younger generations

While the share of TDFs among 60-year-olds was only 18.8% at the end of 2021, it was well over 50% among 20-year-olds (Fig. 9). One reason for the divergence is that target-date funds were only introduced in the 1990s.[7] So while the older generation, also due to supply, had primarily saved in active funds and are now selling them in retirement to support themselves, the younger generations are relying more on cheaper, often passive pension products.

Fig. 9: 401(k) asset allocation varies with age of participants

Average asset allocation of 401(k) account balances, as a percentage of account balances, year-end 2019



As of: 31/12/2019
Source: ICI Research Perspective, "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2019"

2. The TDF industry is highly concentrated

Only a handful of asset managers control the TDF market

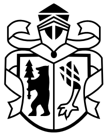
The five largest providers (Vanguard, Fidelity, T. Rowe Price, BlackRock, American Funds) account for almost 80% of assets under management, with Vanguard holding around one-third market share (Table 1). While this leads to positive economies of scale for asset managers, which can be passed on to clients through lower fees, it could also limit future competition. In addition, the trend towards more equities being held by a few index fund providers is reinforced – with corresponding side effects.

Table 1: The 5 largest target date providers represent 80% of the market

Provider	TDF assets in billion USD	Market share 2021
Vanguard	1,190	36.4%
Fidelity	460	14.1%
T. Rowe Price	374	11.5%
BlackRock	289	8.8%
American Funds	248	7.6%
State Street	122	3.7%
JPMorgan	110	3.4%
Nuveen	87	2.7%
Principal	85	2.6%
Schwab	31	0.9%
Sum	**2,996**	**91.7%**

As of: 31/12/2021
Source: Morningstar Direct

[6] See Parket et al., 2022: „Household Portfolios and Retirement Saving over the Life Cycle"; 2021: "Retail Financial Innovation and Stock Market Dynamics: The Case of Target Date Funds"
[7] See SEC, 2008: „Target Date Funds – a good idea co-opted", https://www.sec.gov/comments/4-582/4582-3.pdf



3. Trend towards higher equity exposure

According to Morningstar, the last decade has seen significant exposure changes in the TDF industry.[8] The equity target weight of retirement products has increased markedly compared to 2011, most likely driven by the ongoing low interest rate environment. Among investors furthest from retirement, the equity weighting has increased from 85% in 2011 to 92% in 2021 – some sponsors are now even starting with an equity allocation of nearly 100% – while the equity allocation in the retirement period has increased by an average of 3 percentage points to 46% (Fig. 10). As a result, the equity share of US private investors has also increased significantly over the past two decades, as now TDFs with their high equity ratios are often the default option for occupational pension plans, especially in younger years. Today, 90% of employers offer TDFs as standard options in their pension plans. Accordingly, pension plans invest less than before in money market funds and significantly more in multi-asset funds with a high equity quota.

Target equity weighting of the TDFs has risen noticeably over the last few years, …

4. Higher allocation to international equities within the equity quota

In addition, fund providers have reduced the share of US equities and thus the home bias within the equity allocation in recent years. At the end of 2021, international equities accounted for around 35% of the total equity exposure 40 years before retirement (Fig. 11). This share of non-US equities remains largely unchanged until retirement age. However, this was not the case 10 years earlier. At the time of retirement, non-US equities accounted for only about 27% of total equity exposure at the median in 2011.

… as has the allocation to international equities

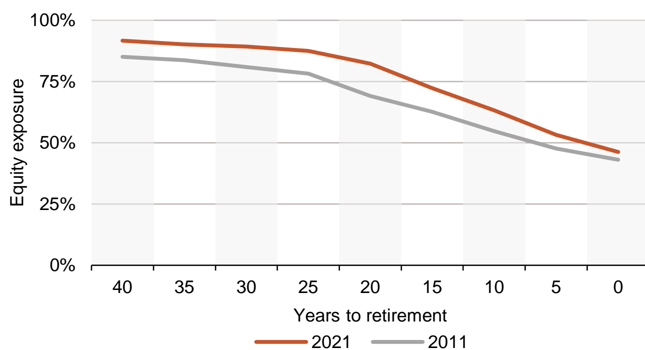
5. TDF era promotes mean-reverting and negative correlation of equities and bonds

For otherwise comparable stocks, those with higher (indirect) TDF ownership show lower returns after strong broad equity market rises. Consistent with this, the equity market shows a stronger monthly "mean-reverting" trend since the TDF era.[9] Moreover, the academic literature also suggests that the continued growth of TDFs should influence the correlation properties between equities and bonds. Rebalancing flows are likely to lead to a negative correlation of equities and bonds after a strong relative outperformance of one asset class, at least temporarily.

The rebalancing flows of TDFs reinforce the mean-reverting effect

Fig. 10: The equity quota has risen considerably

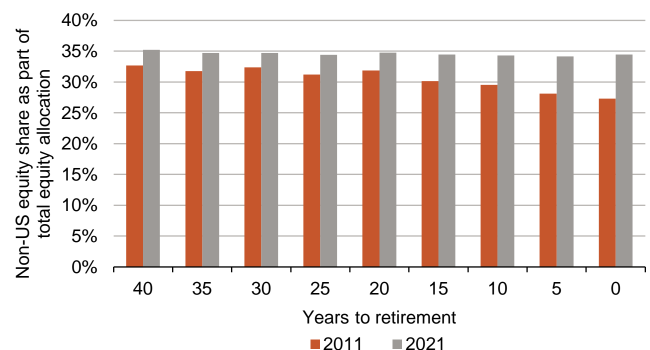
Median equity glide path, 2011 and 2021 in comparison, equity weighting in %



Time period: 2011, 2021
Source: Morningstar Direct

Fig. 11: Allocation to international equities increases

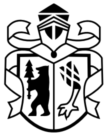
Weightings of non-US equities by vintage, 2011 and 2021 in comparison, in %



Time period: 2011, 2021
Source: Morningstar Direct

[8] See Morningstar, 23/03/2022: „2022 Target-Date Strategy Landscape"

[9] See Parket et al., 2022: "Retail Financial Innovation and Stock Market Dynamics: The Case of Target Date Funds"



6. US retirement market is a key driver of the enormous growth of index products.

US retirement market drives growth in index products …

The growing US retirement market with investments at the index product level is a key driver of the enormous growth in index products. Although equity indices have fallen sharply across the board this year, not least due to the central banks' tightening monetary policy, equity funds have seen almost USD 365 billion in inflows (Fig. 12). Passive index funds in particular were able to collect new money, while active funds had to struggle with outflows. The trend of recent years has therefore continued, with the corresponding side effects for capital markets, which we have already highlighted in one of our Focus articles in 2021.[10]

… and thus growth in index fund assets under management

Parallel to this absolute growth, the share of index fund assets in total fund assets has increased significantly, according to the ICI. Even though actively managed funds still represented the majority of fund assets (57%) at the end of 2021, index mutual funds and index ETFs together accounted for 43% of fund assets under management at the end of 2021, compared to only 21% at the end of 2011 (Fig. 13).

Lessons for investors – influence of TDFs to increase further

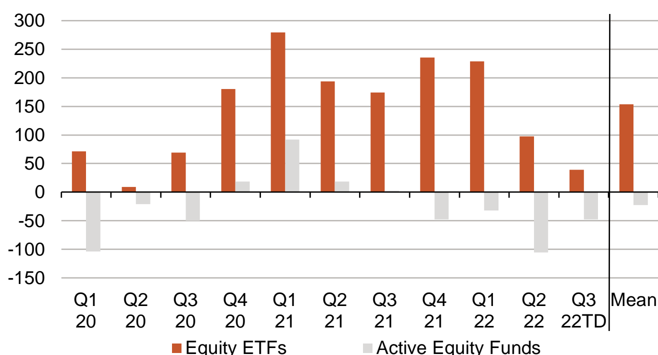
Inflows into equity (index) funds should continue to increase, supporting equity markets

Overall, we believe that the increasing relevance of TDFs will have three main effects on the market structure. Firstly, the continuous inflows into TDFs should be positive for equity markets and especially for the equities they hold over the next few years, especially since the share of equities within TDFs has been increased by providers in recent years and the younger generation primarily uses TDFs in occupational pension provision. Accordingly, inflows into equity (index) funds, which are mainly used in TDFs, should continue to increase and this should support equity markets ceteris paribus.

Higher share of non-fundamental investors and trend of higher valuations likely to continue

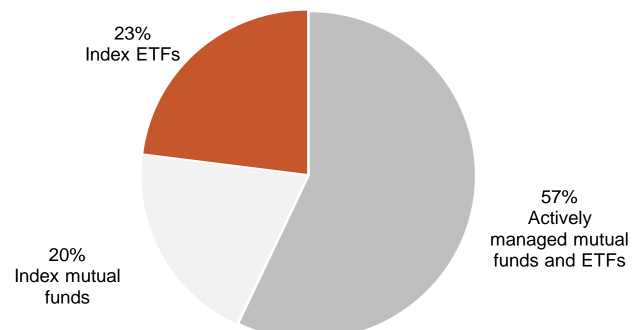
Secondly, this is likely to increase the share of non-fundamental investors even further, as TDFs automatically buy shares and valuation ratios do not matter. This is likely to drive equity market valuations even higher. One reason why we believe the US equity market is the most expensively valued is that the US market has the highest passive penetration of all equity markets.

Fig. 12: Passive funds dominate inflows …
Inflows into active and passive equity funds, in billion USD



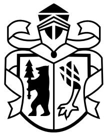
Time period: 01/01/2020-31/08/2022
Source: Bloomberg, own calculations

Fig. 13: … even though actively managed funds still account for the majority of total fund assets
Assets under management 2021



As of: 31/12/2021
Source: Investment Company Institute

[10] See " Berenberg Markets - Focus "Passive investments change market structure and market behaviour", 5 May 2021



TDFs tend to act as a countercyclical stabiliser in times of crisis

The third advantage is that in times of crisis there is an automatic stabiliser in the form of TDFs due to their built-in rebalancing mechanisms. TDFs tend to act counter-cyclically in times of crisis. However, this only applies as long as equities and bonds do not fall sharply at the same time. TDFs often only focus on these two asset classes. Alternatives and commodities are usually left out. The limited diversification has worked well in recent decades with steadily falling interest rates and in an environment that tends to be deflationary, but it could prove problematic in the future – especially if the correlation between equities and bonds were to remain in positive territory for a longer period of time. Then there would be little or no rebalancing after strong movements of both asset classes. For example, when equities and bonds both fell significantly at the same time in the first quarter of this year, there was no need to rebalance TDFs strongly because the relative weights had hardly changed. Moreover, TDFs are not likely to have a particularly stabilising effect in recessions with increased unemployment, because monthly payments into pension products are then likely to decline.

However, limited diversification could be problematic in an inflationary environment with increased equity-bond correlation

Against this backdrop, investors should closely observe when the trend of positive inflows into index products reverses and ETFs/index funds are sold on a net aggregate basis. Although this is likely to take years (or even decades) for the market as a whole, index stocks that are disproportionately held by such ETFs are likely to come under pressure. Until then, however, one should not oppose the structural passive inflows, but exploit the knowledge of these flows and rebalancing as an active investor. Especially since TDF assets under management are likely to rise rather strongly in the near future, supported also by 401(k) reform aimed at giving employees of smaller companies easier access to retirement accounts, which the US Congress is expected to pass by year-end 2022.[11]

[11] See https://news.bloomberglaw.com/daily-labor-report/senate-finance-committee-advances-retirement-package

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Date: 14 September 2022

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