

Equity markets, benchmark indices, and the transition to a low-carbon economy

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Key Messages

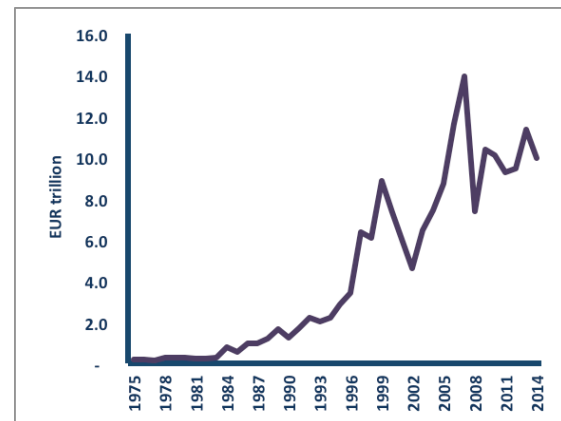
- *Equity markets have a significant share in financial markets, with institutional investors playing a substantial role. Market-capitalization weighted indices drive investment by investors in these markets.*
- *Today's landscape of market-capitalization weighted indices favors high-carbon sectors and creates biases against green, low-carbon technologies. The implication of this bias is that institutional investors have lower exposure to the green economy. In the context of the transition to a low-carbon economy, this may imply capital misallocation creating financial risk.*
- *From a policy makers and regulators perspective, these may be trends that should be addressed. First, the research presented in this report on financial products and tools suggests these products are not fully transparent for institutional and retail investors. Policies can play a key role in increasing transparency in financial markets, notably with regard to the diversification of benchmark indices. Second, potential sub-optimal diversification delivered by the current landscape of mainstream financial products may be a challenge to questions around fiduciary duty. This may apply in particular as well to the mandates of public investors. Third, diversification of indices plays a key rule in EC regulation around capital reserve requirements. Finally, more active policy makers may seek to explore incentives around more climate-friendly financial products.*

I. EQUITY MARKETS AND INSTITUTIONAL INVESTORS

Equity markets make up roughly one-fourth of global financial assets. In Europe, the domestic market capitalization of listed equities was nearly \$10 trillion in 2014. Market-cap weighted indices are the dominant financial product in determining investment for listed equities.

Listed equities are, behind bonds, the second largest asset class in global financial markets. Global market capitalization was an estimated \$65 trillion in 2014 and nearly \$10 trillion for Europe in 2014. These numbers have grown exponentially over the past decades from less than \$4 trillion in Europe in the mid-1990s (Fig. 1).

Figure 1 Domestic market capitalization of listed equities in Europe in trillion EUR (Source: WFE 2015¹)



Institutional investors play a key role in equity markets. In Europe, they account for roughly \$13 trillion in assets under management.² While there are significant differences across countries and by type of investor, the share of listed equities in an average European institutional investors portfolio is between 26-49%.³

For both retail and institutional investors, a significant share of these investments is managed on the basis of market capitalization weighted indices. 75% of European institutional investors use market-capitalization weighted indices either to track or index their listed equity portfolios.

The use of these financial products is intrinsically connected to the challenge of climate change. First, the current landscape of financial products appears to create an exclusion bias against the green economy. Second, their current diversification may create financial risks. For both issues, increased transparency appears as a key challenge.

III. FINANCIAL MARKET INDICES AND THE TRANSITION TO A LOW-CARBON ECONOMY

Market capitalization-weighted indices appear to systematically under-weight the green economy and partly over-weight the high-carbon economy.

Market capitalization weighted indices have a significant influence on the capital allocation decision-making framework in listed equity markets. First, many investors use (primarily market-capitalization weighted) indices to replicate the index as part of a passive investing strategy. PWC estimates that by 2020 over 20% of all assets under management will be invested passively.⁴

Second, many active investors closely mirror the index as part of a “closet indexing” strategy. Estimates suggest that this as many as 30-40% of investors apply this approach.⁵

Third, many active investors using indices as performance benchmarks closely mirror the *sector allocation of the index*. The average fund, based on a sample of over 100 funds, replicated roughly 85-92% of the sector allocation of the index.⁶

Fourth, indices are used as parent indices for specialized and customized index products. One example for this are low-carbon index products.

High-carbon companies are significantly represented both in listed equity markets and in market-cap weighted equity indices. They make up between 10-16% of the FTSE100 and CAC40, the two most prominent indices in the UK and France respectively (Fig. 2). In France and the United Kingdom, these indices over-weight the oil & gas sector relative to the listed equity universe. This implies that investors using these indices may over-weight the sector relative to the market.

Figure 2 Share of oil & gas in indices and listed equity market (Source: 2° Investing Initiative 2014⁷)

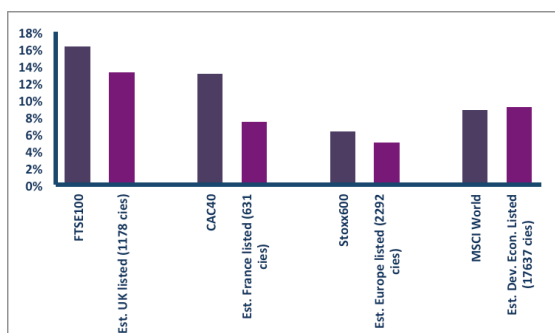


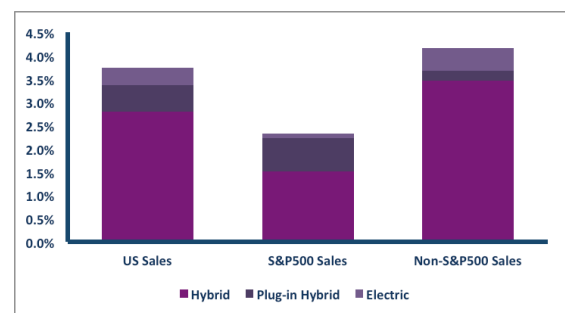
Fig. 2 also demonstrates that, aside from the UK and France, market-capitalization weighted indices generally reflect the listed equity universe, when taking a *sector* view. There are two key challenges in this regard.

Sectors are poorly designed to reflect diversification relevant from a climate perspective.

For the utility sector, the key question in terms of climate change is not the exposure to the utility sector itself, but to high-carbon / low-carbon technologies in that sector – specifically renewables, coal, gas, and nuclear power.

In the automobile sector, the key question relates to fuel efficiency and the share of sales in sustainable propulsion technologies (e.g. hybrid cars, electric vehicles, etc.) For the automobile sector for example, data from the United States suggests that the S&P 500 underweights sustainable propulsion technologies. Even in the oil & gas sector, the climate exposure can differ significantly.

Figure 3 Share of sustainable propulsion technologies in S&P 500 and US car sales (Source: 2° Investing Initiative 2014⁸)



Listed equity indices and markets do not capture the real economy.

Market-cap weighted equity indices are designed to mirror listed equity markets. Both indices and markets however do not represent the real economy. The share of the oil & gas sector for example in France and the UK is less than 3%, relative to a +12% share in the major index.⁹ This disconnect suggests that these indices over-weight the oil & gas sector relative to the real economy. While they may not be designed to reflect the economy, they are frequently seen by trustees and the general public to serve this role. Indices are used as ‘bellwethers’ of the economy

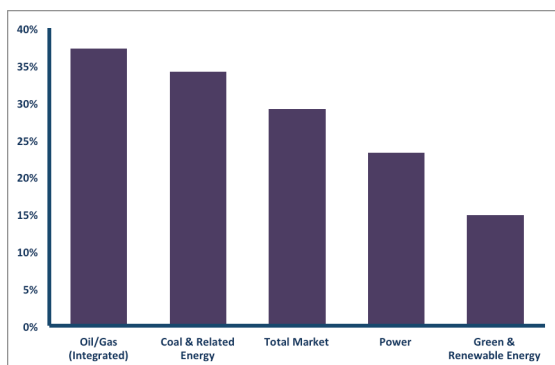
IV. IMPLICATIONS FOR CLIMATE CHANGE AND FINANCIAL RISK

The bias of current financial products leads institutional investors in particular to under-weight the green economy.

Market-capitalization weighted indices are used as investment and sector allocation guidelines. Their calculation rules in some markets preferences high-carbon sectors. They also demonstrate a more general preference for large companies. This tends to exclude the green economy. As outlined above, green technologies in the automobile and utility sector for example are generally less represented in larger companies.

It can also be seen at sector level data for institutional holdings. Institutional investors in Europe own over 35% of the shares of integrated oil & gas companies and less than 15% of the shares of companies classified as 'green & renewable energy' (Fig. 4).

Figure 4 Share of institutional holding by sector in Western Europe (Source: 2° Investing Initiative¹⁰)



Policy makers and regulators are increasingly focusing on the role of institutional investors in financing the transition to a low-carbon economy. The European Commission published a report focused on the topic in March 2015 mapping regulatory opportunities for mobilizing institutional investors on climate-friendly investment.¹¹

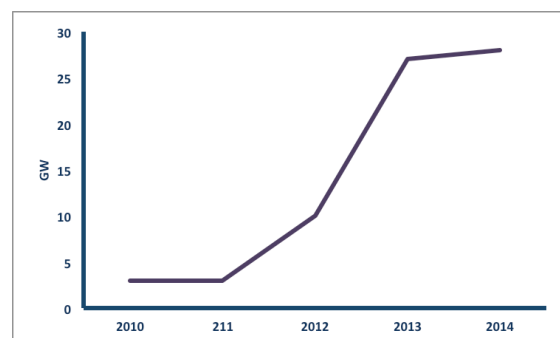
The bias of financial products and associated barrier for tapping institutional investor capital suggests a window of opportunity for regulators and policy makers designing a policy framework for achieving climate goals.

The bias of current financial products, beyond climate issues, may give rise to financial risk in financial markets.

Given the dominance of market-cap weighted indices, they have a very significant influence on capital allocation decisions. The evidence suggests that these capital allocation decisions are, as a result, tilted against 'green' and in favour of high-carbon companies. This can have implications from a financial risk perspective for two reasons.

First, there is a growing body of evidence that there are 'stranded assets' risk for high-carbon sectors and technologies. UBS finds 70 GW of high-carbon power plants were shut down between 2010 and 2014, more than the entire nuclear power installed capacity in France (Fig. 5). One key aspect of course is that these risks to energy technologies are hidden by sector guidelines.

Figure 5 Closures of CCGT and coal power plants in Europe (Source: UBS 2015¹²)



Second, the dominance of market-cap weighted indices can be largely attributed to their perceived attributes as market benchmarks. Market actors see them as presenting 'optimal diversification'.

This report challenges this assumption. It suggests that the financial products are under-exposed to the climate-friendly economy – even as it appears today. This under-exposure implies sub-optimal diversification. Traditional financial theory, in particular the modern portfolio theory dominant in the market today, suggests that sub-optimal diversification may expose investors to idiosyncratic risk.

VI. OPPORTUNITIES FOR POLICY AND REGULATORY RESPONSE

This research presented here suggests four implications for policy makers and regulators: transparency, fiduciary duty and mandates, index regulation, and incentives



Disclosure: For companies, this disclosure in Europe is partly regulated by the EC Directive on non-financial disclosure of companies.¹³ In the oil & gas sector for example, there are standards around reporting oil & gas reserves. Similar standards may be put in place for other sectors and energy technology-relevant data. Beyond corporate data, better disclosure is obviously a key issue as well for financial products. All index factsheets today inform on sector diversification. This disclosure may have to extend to diversification from an energy technology perspective. It should also be linked to broader reporting requirements around investor disclosure, as implemented in France as part of the French Energy Transition Law¹⁴



Risk and fiduciary duty: The *prudent investor rule*, a key part of the fiduciary duty concept, suggests investors should diversify in line with the 'market portfolio'.¹⁵ A key question is whether institutional investors are indeed buying the market given the potential under-exposure to the climate-friendly green economy. It is now recognized that sustainability is part of the delivery of fiduciary duty. As a result, it is incumbent on fiduciaries to choose performance metrics and benchmarks that are aligned with long-term investment goals. The objective is not to argue that diversification doesn't exist, but that fiduciary duty suggests diversification should be *managed*.

The first step to responding to this challenge can



Regulation of indices. The European Parliament is currently debating regulation on the use of indices as benchmarks in financial instruments.

The regulatory initiative is largely in response to the financial scandals around the manipulation of benchmark indices for interest rates and commodity markets. At this stage, equity indices are not considered in the Proposal from the European Commission.¹⁶ One key aspect in the current proposal is the definition of 'critical benchmarks' and more stringent requirements around their regulation. While the regulation as currently designed does not necessarily address the applicable issues of equity indices, it may be relevant to explore the links.

At the same time, regulation on benchmark equity indices plays a prominent role in the EU regulation 575/2013 on prudential requirements for credit institutions and investment firms. The regulation highlights the issue of diversification 19 times in the Regulation. Stock indices are treated in Article 344 of the Regulation, specifically §4 that introduces the concept of an "appropriately diversified index". These types of indices are only subject to a market risk charge and not a position risk charge, as defined in Art. 362, under the assumption that as market proxies they do not face position risk. The European Banking Authority as part of Implementation of Technical Standards has developed four criteria for diversification, related to concentration, number, geography, and industry diversification.¹⁷ In terms of industry, it requires that an index should include at least four sectors.¹⁸ The analysis presented here suggests the current set of criteria on broad diversification do not capture key diversification issues from the perspective of the transition to a low-carbon economy.

Misaligned Incentives. One pathway for regulatory response may relate to addressing the underlying incentives driving the current biases in mainstream

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