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EXPERT COMMENTARY

Energy intensity, capital value and location must all inform the analysis, says Will Robson, MSCI's global head of real estate solutions research

How to align portfolios with a net-zero world

Real estate investors are increasingly aligning portfolios with the goal of keeping the rise in average temperatures to 1.5 degrees Celsius (1.5C) above pre-industrial levels, which is the limit that science tells us can prevent the worst effects of global warming. Last month's COP26 climate conference in Glasgow, Scotland, is likely to accelerate the focus on financial assets, including real estate.

Achieving the 1.5C goal will likely require driving emissions portfolio-wide to net zero in the coming years. It will also take a massive effort to improve the energy efficiency of buildings. We estimate that in order to stay on track to reach net-zero emissions by 2050, real estate portfolios will have to reduce their aggregate emissions by roughly 80 percent between now and 2034.

Uneven risk

Investors may, however, find that climate-related financial risk is not distributed evenly throughout their portfolios. The energy a building uses and the intensity of its emissions (that is, the energy use in relation to the building's size); its capital value on an absolute and per-square-meter basis; and its location all may influence both the transition risk inherent in the broader portfolio and investors' priorities for decarbonizing specific properties within it. For example, a building most at risk of losing value, if required to decarbonize rapidly, may, depending on its weight in a portfolio, contribute relatively little risk portfolio wide.

Consider, for instance, a hypothetical portfolio of 100 buildings assembled from the latest MSCI Global Annual Property Index, which tracks the performance, as of December 2020, of nearly 60,000 retail, office, industrial,

residential, hotel and other buildings.

A transition to net zero that keeps temperature rise to 1.5C could cause the portfolio to lose roughly 6.4 percent of its value, according to an analysis by MSCI that examined transition risk – chiefly, the costs and timetable for cutting a building's carbon emissions to net zero.

The aggregate change in value, however, masks a range of impacts on specific buildings, which the analysis suggests could lose anywhere from 0 percent to 53 percent in value from the transition. The aggregate also obscures the contribution of specific properties to portfolio-wide risk, based on their weight in the overall portfolio.

Highest-risk assets may not be the most emissions-intensive (% indicates variable relative to distribution across the portfolio: 0% = smallest, 100% = largest)

	Australia super-regional mall (%)	Australia small industrial building (%)	Italy Mall A (%)	Italy Mall B (%)	Japan Mall (%)
Capital value in the portfolio ($m)	100	7	29	32	49
Energy intensity (use in relation to the physical size of the building)	20	2	100	100	57
Emissions intensity (emissions per sq m)	64	24	60	100	70
CVaR (1.5C)	19	100	20	23	37
CVaR contribution (1.5C)	100	4	31	40	96

Source: MSCI, based on valuations as of December 2020

Priorities within a portfolio

For insight into how investors might translate a climate analysis of their real estate portfolio into action, consider again the 100-building portfolio.

In the table shown, five assets are highlighted – a super-regional shopping mall and a small industrial building in Australia, two retail malls in Italy and a shopping mall in Japan. Each asset stands out for recording the highest reading within the portfolio on one of the measures of its transition risk, as calculated using MSCI's Climate Value-at-Risk (CVaR) model.

A fund manager might, for example, assign a high priority to pushing the Australian shopping mall to decarbonize while largely disregarding the industrial building there. That is because, as the largest asset in the portfolio by capital value, the shopping mall contributes most to the portfolio's aggregate transition risk, notwithstanding its energy efficiency compared with the other properties in the portfolio.

The industrial building, by contrast, faces high risks from decarbonizing but has a comparatively small impact on aggregate portfolio value at risk.

A comparison of other assets in the hypothetical portfolio further illustrates the importance of understanding the drivers of transition risk. Assets with similar risk and portfolio contributions may drive risk for different reasons and require different approaches to abatement.

While the retail malls in Italy each generate the same, high energy intensity – reflecting the energy inefficiency of the country's building stock – Mall A has lower emissions due to a cleaner energy mix. This together with Mall A's slightly smaller size means it contributes less to overall portfolio transition risk than Mall B.

Note, too, that Mall A has a similar emissions intensity as both the Australian and Japanese malls. All three assets face a roughly similar degree of transition risk. But with much less weight in the portfolio, Mall A contributes only about one-third as much transition risk as the Australian or Japanese malls.

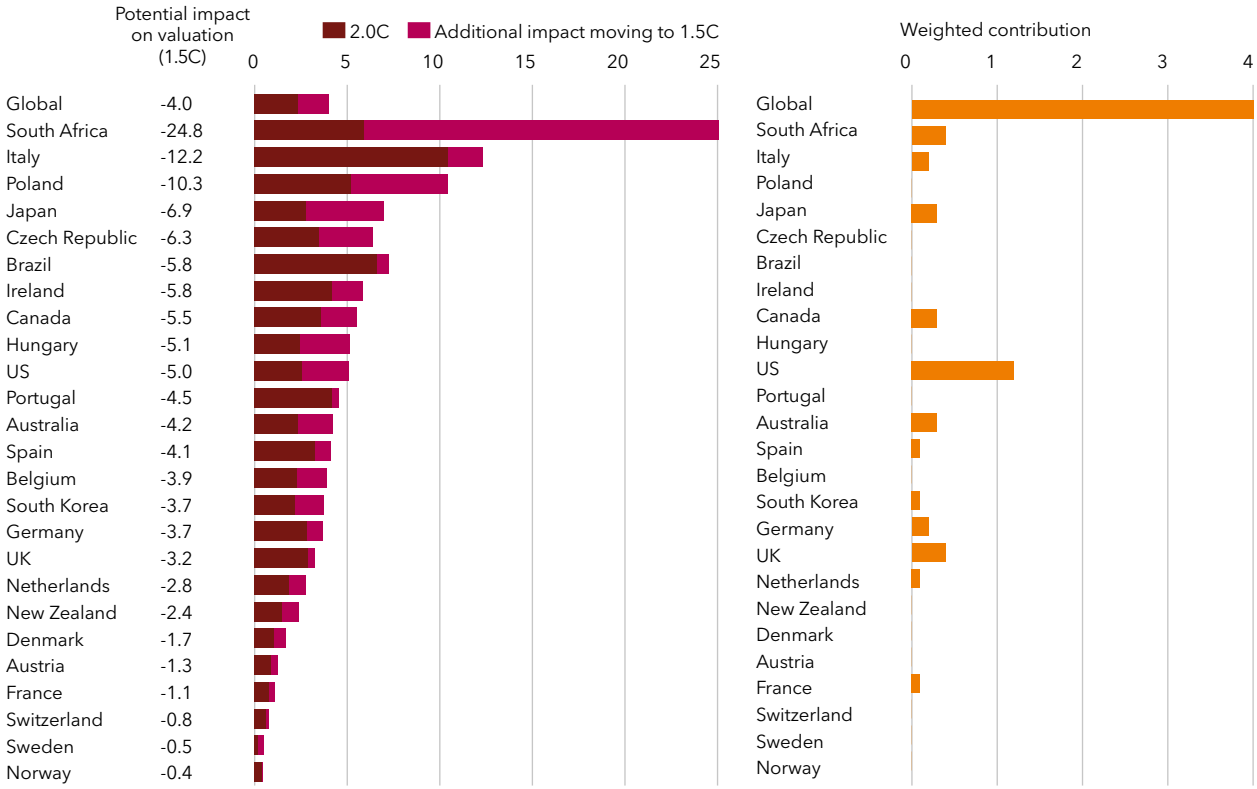
80%

Reduction in aggregate emissions that property portfolios need to make between 2021 and 2034 to achieve net zero by 2050

Location, location, location

As the hypothetical portfolios suggests, the carbon intensity of countries' building stocks – as measured by carbon emissions per square meter, per year – varies greatly. So, the level of transition risks will also vary

Climate transition risk and impact on portfolio values of aligning with 1.5C warming, by country, from most to least impacted (%)



*MSCI weights together country-level risk estimates by our estimate of real estate market sizes. Bigger countries, like the US, contribute more to the total climate transition risk. So, while the US has moderate transition risk, it has a much higher contribution to the global risk reading than smaller but higher risk markets like South Africa.
Source: MSCI, based on data as of December 2020

accordingly and reflect, in part, the degree of decarbonization commitments that countries will be required to make to reach net zero.

MSCI analysis suggests that buildings in Japan and South Africa may face the steepest additional requirements to decarbonize, moving from 2C alignment to 1.5C alignment. This reflects both the comparatively high carbon intensity of buildings in those markets and the shifts in policy that would be required for each country to align its emissions with a 1.5C scenario.

Though Italy's building stock is even less carbon efficient, the country's decarbonization target under the Paris Agreement, which drives our 2C scenario, was already relatively ambitious compared with global peers and closer to the 80 percent reduction MSCI estimates would be required by 2034 to stay on track for net zero by 2050. So, for Italy, aligning nationwide emissions with 1.5C warming would require a smaller additional commitment to cut emissions than South Africa and Japan. Both of these countries' commitments under the Paris Agreement translate to reduction requirements by 2034, under a 2C-degree scenario, that are close to only a third of Italy's, leaving them a much greater distance to travel from 2C to 1.5C alignment in terms of carbon emission reduction.

> *"The challenge now is to translate [investors'] commitment into action"*

Risk and return follows suit. Properties in South Africa face the greatest transition risk in a 1.5C-degree scenario with an estimated loss in value to portfolios of nearly 25 percent, followed by Italy with an estimated loss of 12.2 percent, Poland with 10.3 percent and Japan with 6.9 percent.

Real estate investors are increasingly bold in their commitments toward net-zero alignment. The challenge now is to translate that commitment into action.

While a perfect picture of risk exposure is not essential to making a start, analysis like the one discussed can help investors identify the assets in their portfolio they might prioritize for action to achieve net-zero goals. ■