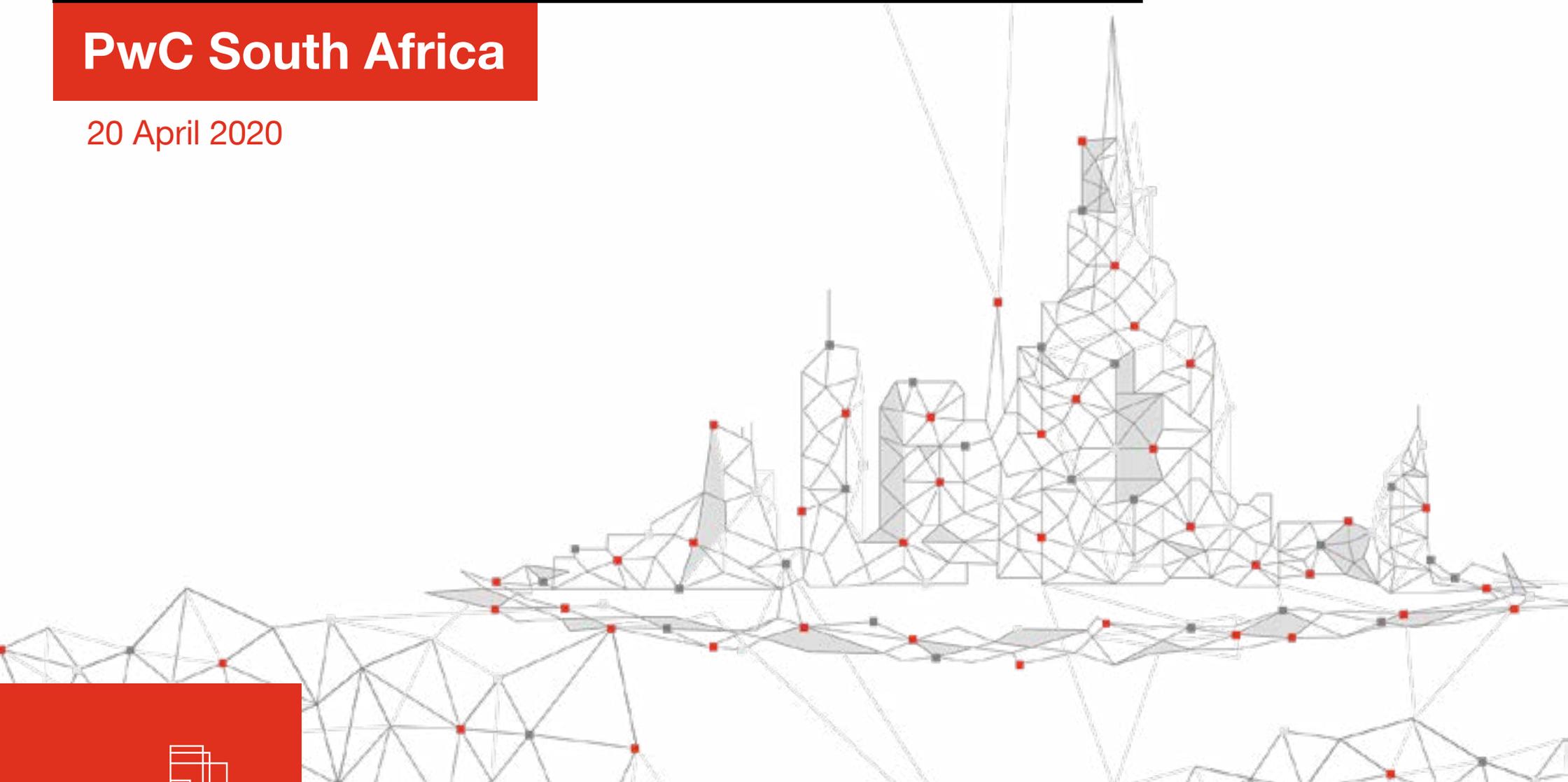


Valuation impact of COVID-19

PwC South Africa

20 April 2020



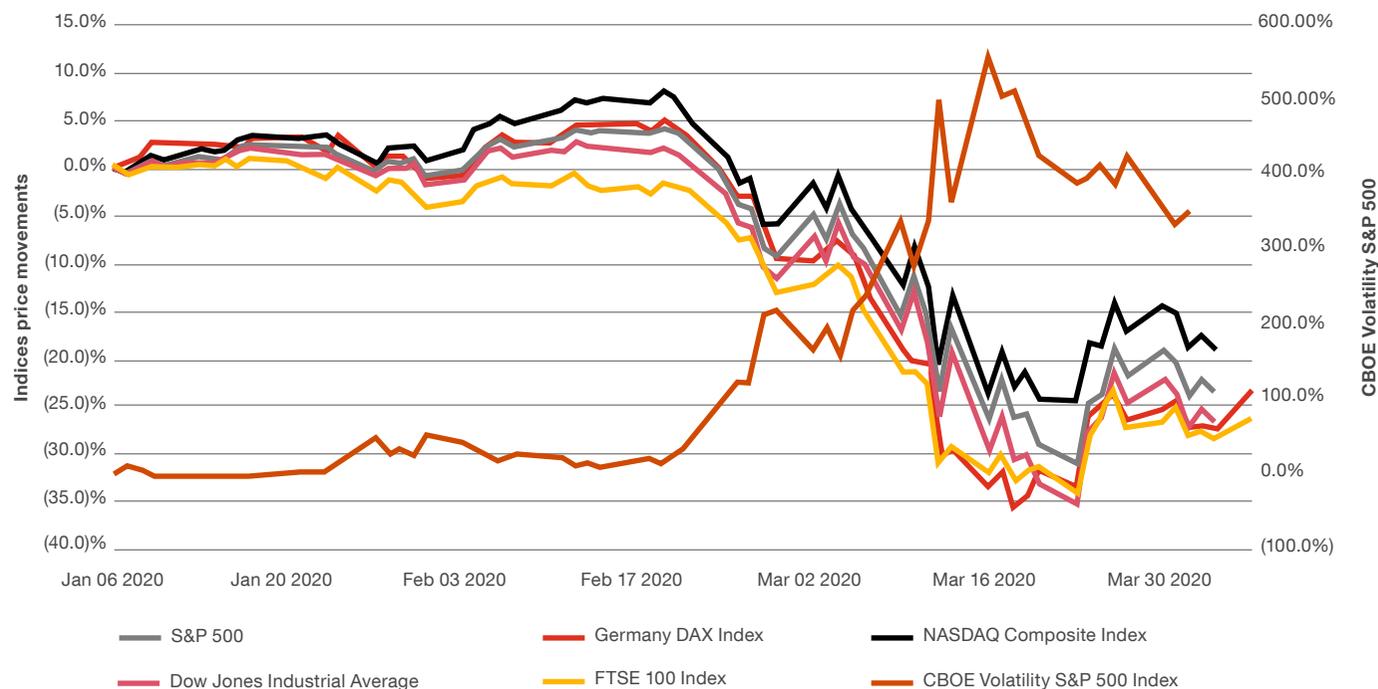
On 30 January 2020, the World Health Organisation (WHO) declared COVID-19 a global emergency. Over the past few weeks, the ripple effect of COVID-19 has been seen in the form of declines in global equity markets, the imposition of travel bans to high risk countries, the lockdown of certain states and countries, followed by supply chain disruption and consumer uncertainty.

While there is still great speculation and discussion on the long-term impact, in this paper we provide some guidance as to whether short-term adjustments to valuation inputs, such as the risk-free rate or equity market risk premium (EMRP), are required.

What is the experience in developed markets?

Developed markets have seen almost unprecedented declines in equity markets. These declines have taken place during substantial equity market volatility.

Selected world indices from 6 January 2020 to 6 April 2020

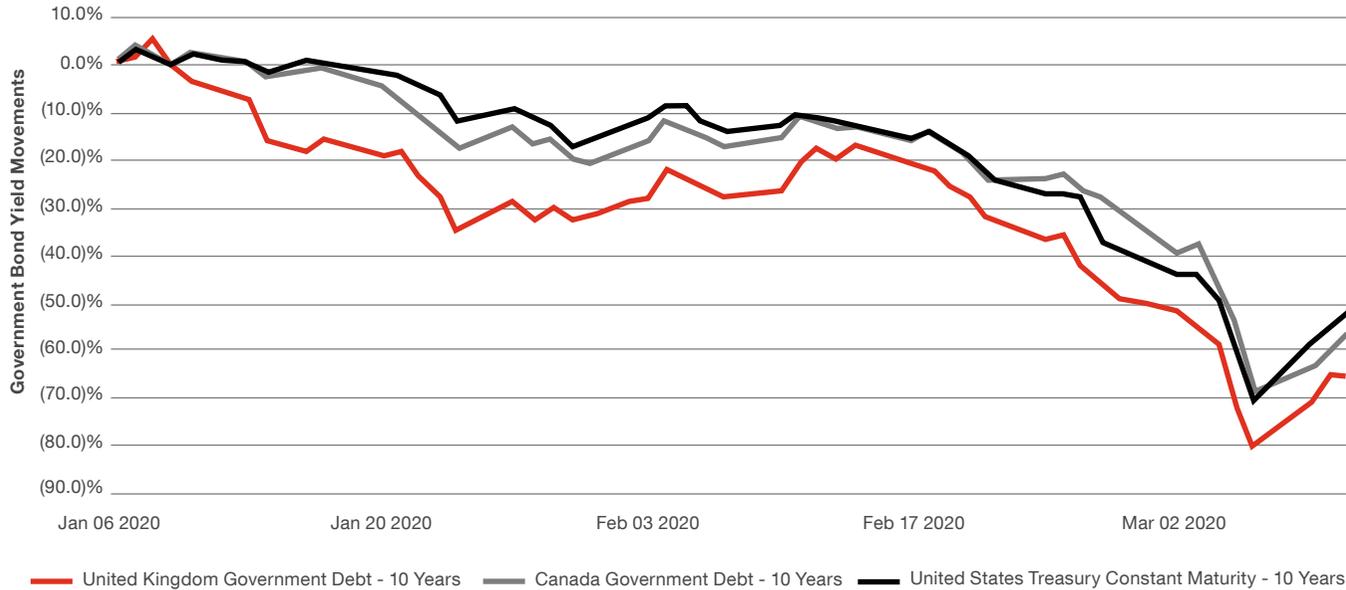


Source: IRESS, S&P CapitalIQ, PwC analysis



In addition to declining equity markets, developed economies have seen significant declines in yields on government debt.

Selected world Government Bond Yield 6 January 2020 to 6 April 2020



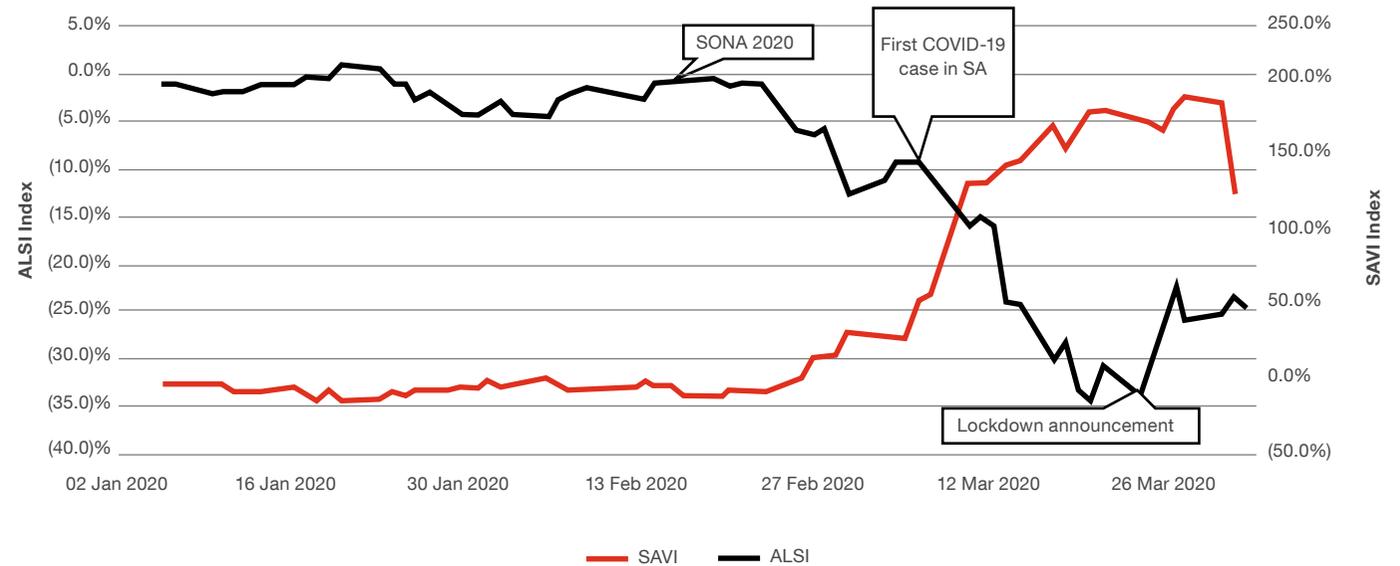
The application of the traditional Capital Asset Pricing Model based on government bond yields that are at record lows would result in a lower cost of equity. However, this would appear counterintuitive, as given equity market volatility, a higher cost of equity would be required to compensate investors for increased risk. Therefore, in developed markets, adjustments to the EMRP may be required to ensure that the cost of equity reflects greater levels of uncertainty and a related increase in the required rate of return.



What is the experience in the South African market?

The All Share Index (ALSI) started to decline towards the end of January, which is when the WHO declared COVID-19 a global health emergency. It was only after President Cyril Ramaphosa's State of the Nation Address (SONA) on 13 February 2020, that the ALSI reported a steady decrease, with the South African Volatility Index (SAVI) on the increase. South Africa's first case was reported on 5 March 2020, with the lockdown announced on 23 March 2020. During this time, the ALSI lost almost 35% since 2 January 2020, and the level of volatility in the market (measured by the SAVI Index) has doubled. From the graph below, it is evident that the ALSI started to fall and volatility indices started to increase from 21 February 2020.

ALSI vs. SAVI Index (Rebased to 2 January 2020)

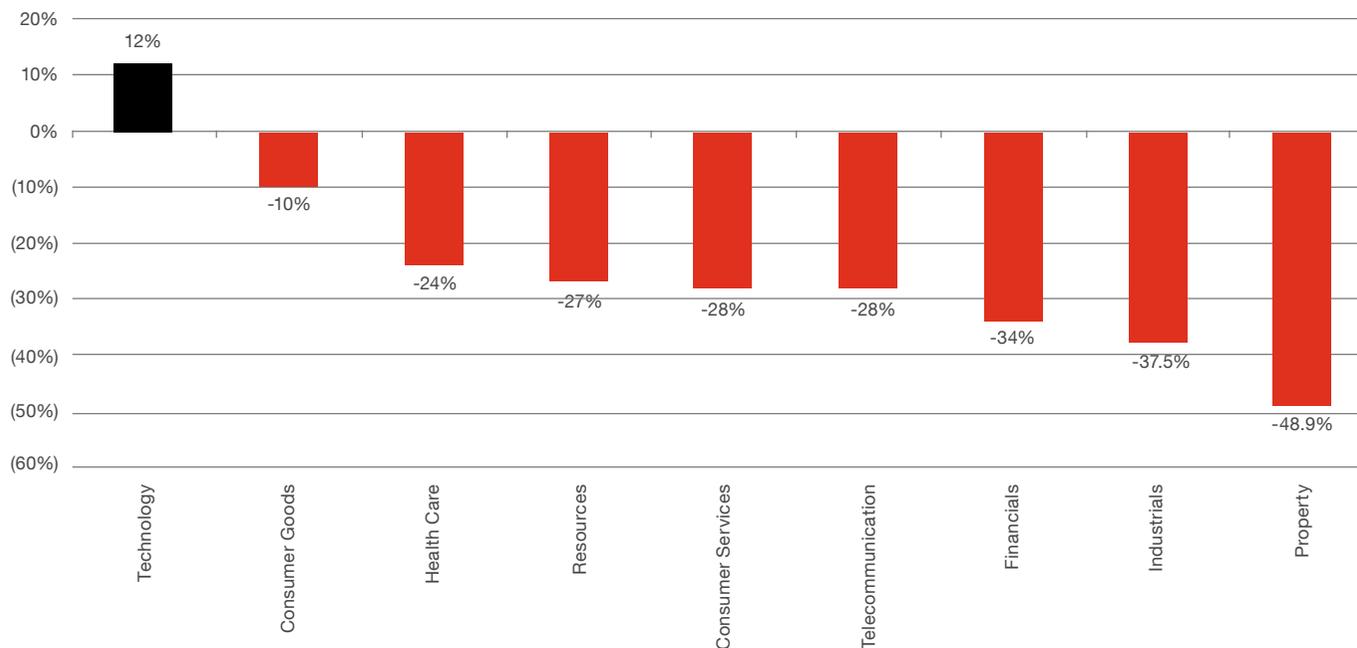


Source: S&P CapitalIQ, PwC analysis



During the period 31 December 2019 to 31 March 2020, certain sectors on the JSE experienced greater declines, such as the listed property sector (FTSE/JSE SA Listed Property), which fell 48.9% in this period, and the industrials sector (FTSE/JSE General Industrials), which fell 37.7% in the same period. The technology sector, represented by the FTSE/JSE Technology (J590), was the only index that exhibited increased closing prices in this period. The increase in this index was supported by Naspers and Prosus, which was buoyed by a weaker Rand and higher demand for online food deliveries, gaming and retail.

Percentage change in sector market prices in South Africa (December 31, 2019 – March 31, 2020)

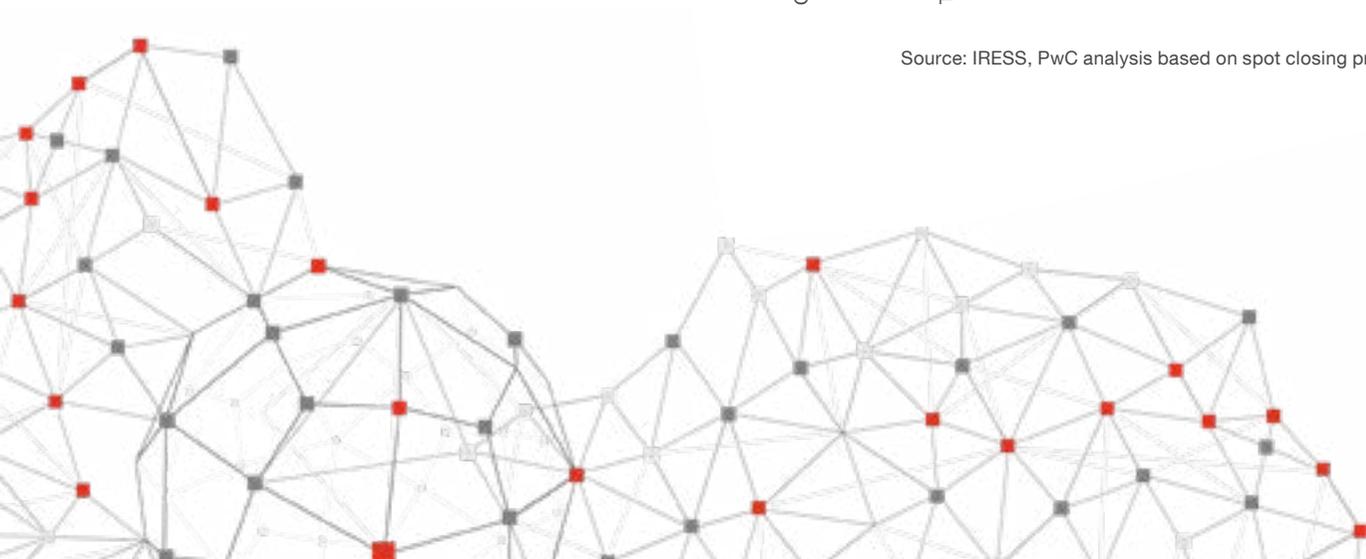


Source: IRESS, PwC analysis based on spot closing prices

In addition to the decline in the South African equity market, South Africa has also witnessed a substantial rise in government bond yields due to the Moody's downgrade and risk aversion brought about by COVID-19.

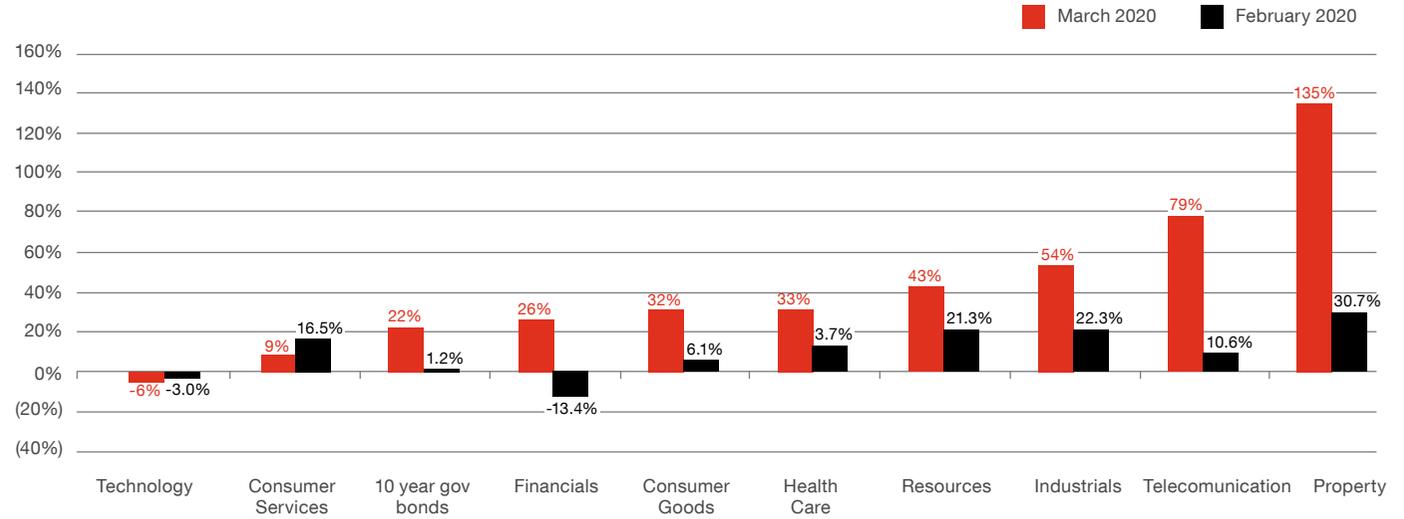
The dramatic rise in yields has given rise to some debate around whether adjustments to key valuation inputs, such as the risk-free rate or equity market risk premium (EMRP) are required.

As a first step, we considered what has happened to earnings yields. This gives a directional view on the cost of equity across different market segments.

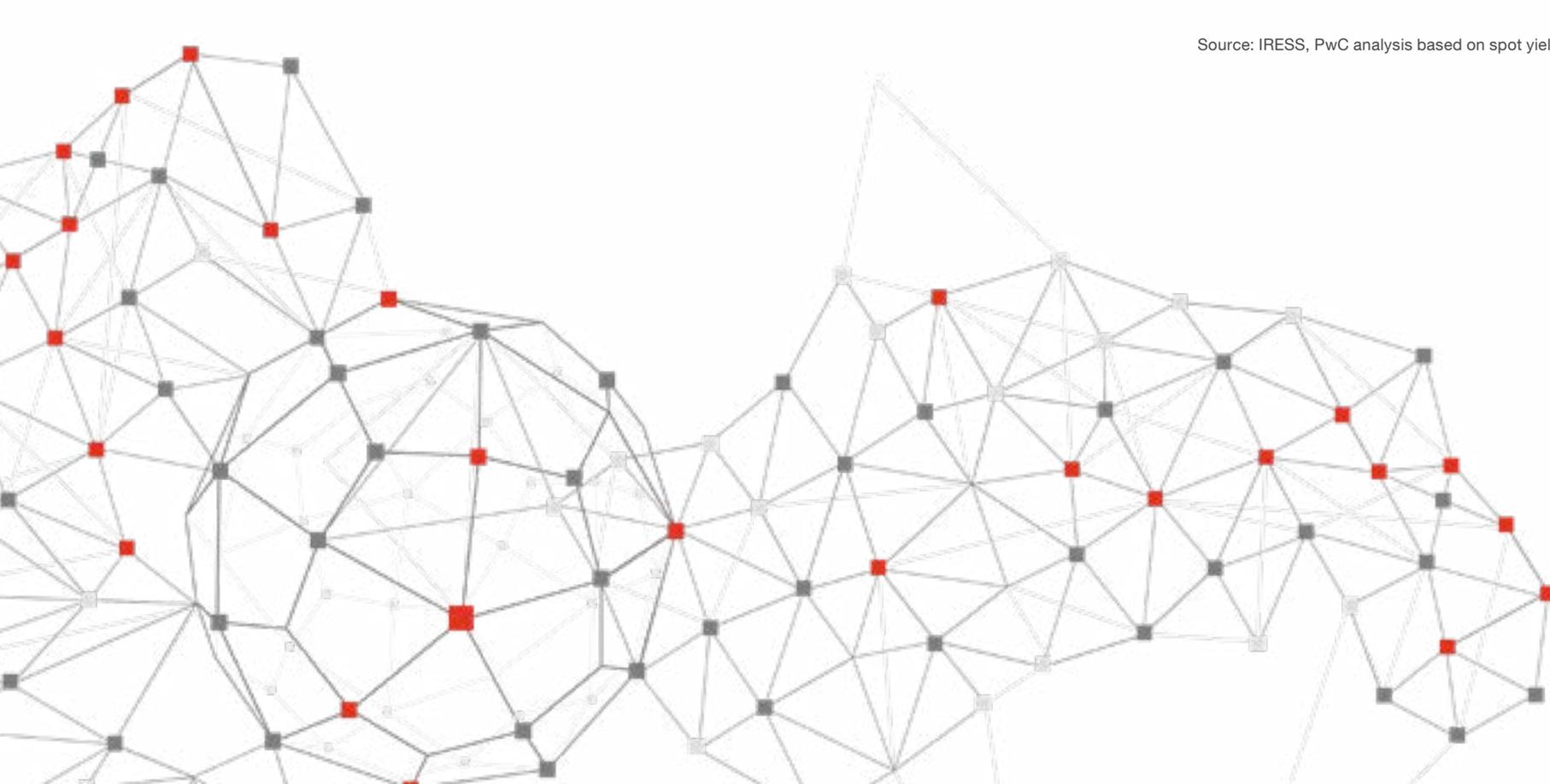


This graph shows the significant increase in earnings yields during March 2020 as a result of COVID-19, the national lockdown and the uncertain impact the downgrade of South Africa's credit rating will have on the economy.

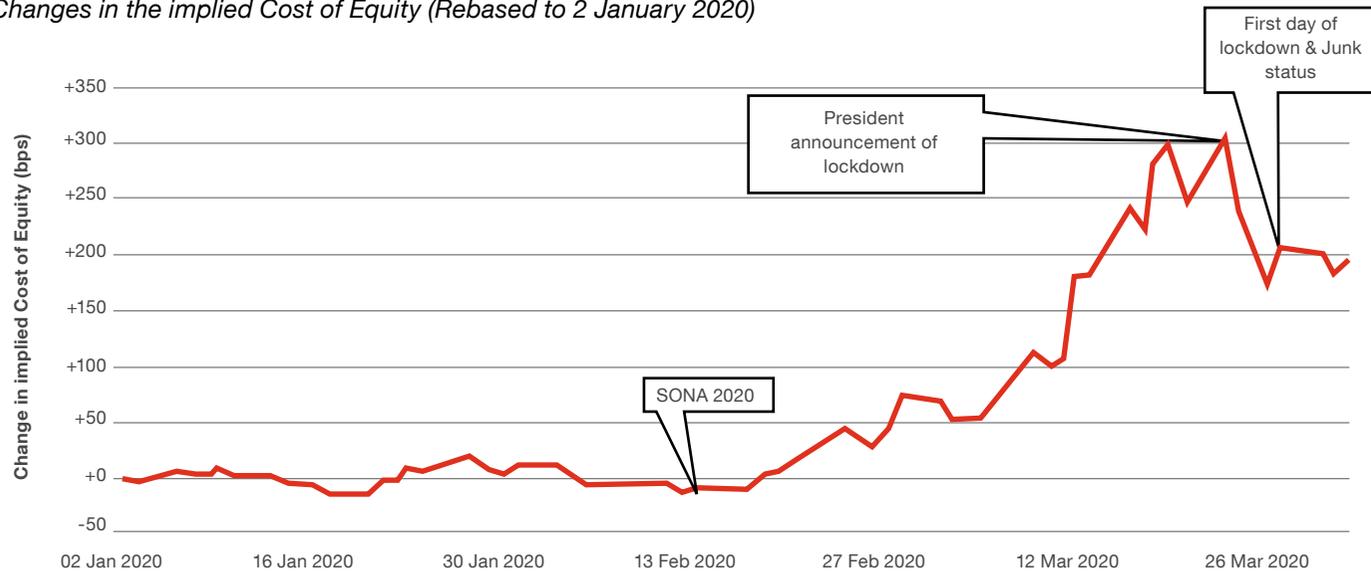
Percentage change in sector earnings yields in South Africa (December 31–2019 as base)



Source: IRESS, PwC analysis based on spot yields using 31 December 2019 as the base



Changes in the implied Cost of Equity (Rebased to 2 January 2020)

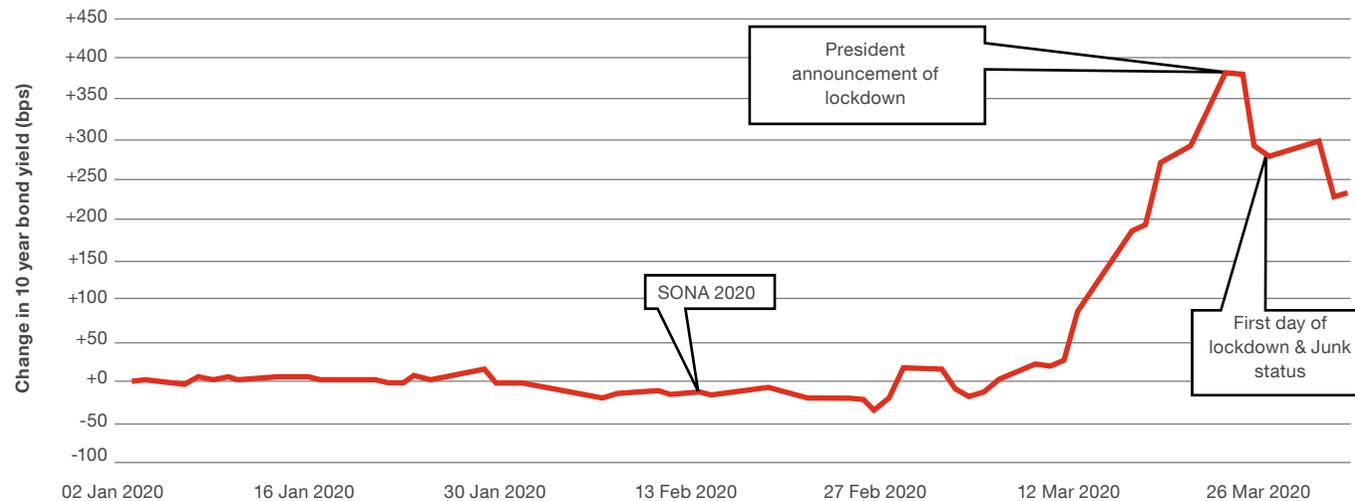


Source: IRESS, Capital IQ, PwC analysis based on spot yields using 2 January 2020 as the base

Since 31 December 2019, the Cost of Equity has increased considerably.

In addition to earnings yields, we calculated the implied cost of equity using the dividend yield on the ALSI and broker consensus forecasts and observed the movement since 2 January 2020.

South Africa Government Debt – 10 Year Bond (Rebased to 2 January 2020)



Source: IRESS, Capital IQ, PwC analysis based on spot yields using 2 January 2020 as the base

In contrast to the movement of the ten-year government bond exhibited by developed countries, the South African ten-year government bond yield is reflecting a similar trend to the movements in the ALSI earnings yield.

Our view is that in South Africa, the increased government bond yields capture increased market uncertainty and risk. It remains to be seen whether the risk-free rate represents a “new normal” and a more medium- to long-term re-rating of markets, or if this represents a short-term anomaly. However, for the time being, given our observations of movements of South African earnings yields and the implied cost of equity, we see no reason to attempt to normalise current risk-free rates.

Our benchmark risk-free rate therefore remains the South African ten-year government bond yield.



Does the rise in yields mean an adjustment to the CAPM-based cost of equity is required?

The rising earnings yields show that investors are requiring higher rates of return, which has manifested itself in lower price/earnings multiples and market declines. Higher levels of volatility, uncertainty and risk would imply a higher cost of equity, so the results are not unexpected.

In South Africa, the decline in share indices and corresponding rises in observed earnings yields have been mirrored by a corresponding increase in the risk-free rate, as measured by the ten-year South African government bond yield. This sets South Africa apart from developed economies, where we witnessed steep declines in government bond yields, necessitating consideration of short-term adjustments to market risk premiums.

Is the spot South African government bond yield a reasonable proxy for the risk-free rate?

Given the high levels of volatility, there is a strong argument to place less reliance on a spot government bond yield and use a slightly longer-term measure. Therefore, our view is that during this period of extreme volatility, it may be appropriate to use the average risk-free rate for the month of March, for example, as opposed to the spot yield at month end. As volatility subsides, it remains to be seen at what level the long-term government bond yields eventually stabilize, and whether the 30 April 2020 spot rate will be a reliable measure of the risk-free rate.



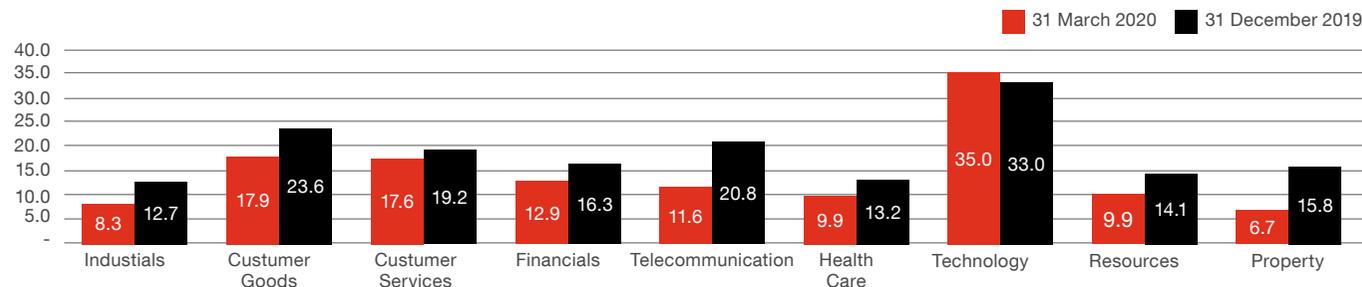
What does this mean in terms of trading multiples?

When using spot or monthly multiples for valuations, most P/E multiples have fallen between 31 December 2019 and 31 March 2020.

The decline in multiples is correlated with a general increase in the cost of equity, so theoretically, both discounted cash flow and market multiple-based valuation methodologies should result in generally lower valuations.

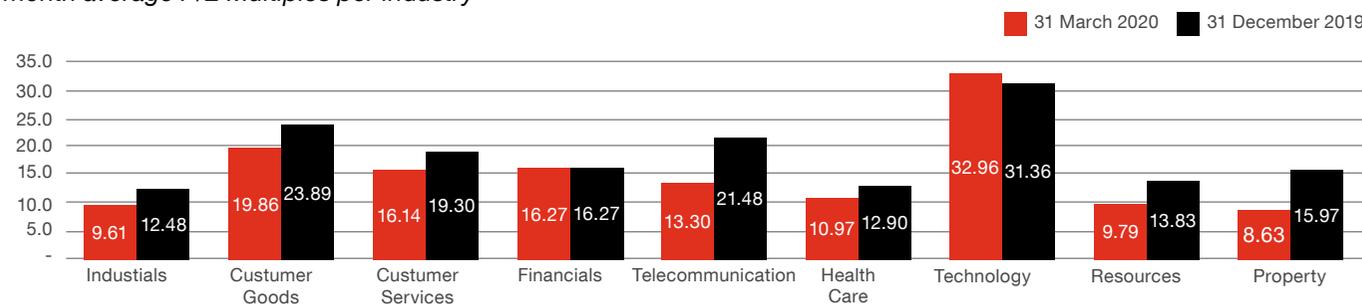
Our view is that trading multiples are an important tool to benchmark any discounted cash flow valuation. However, extreme volatility may necessitate the need to consider using volume-weighted share prices in computing trading multiples. In addition, caution should be applied when using forward multiples where updated broker forecasts are not available. We believe that sector movements cannot be ignored, but care should be taken in calculating and applying trading multiples during times of extreme market volatility.

Spot P/E Multiples per industry



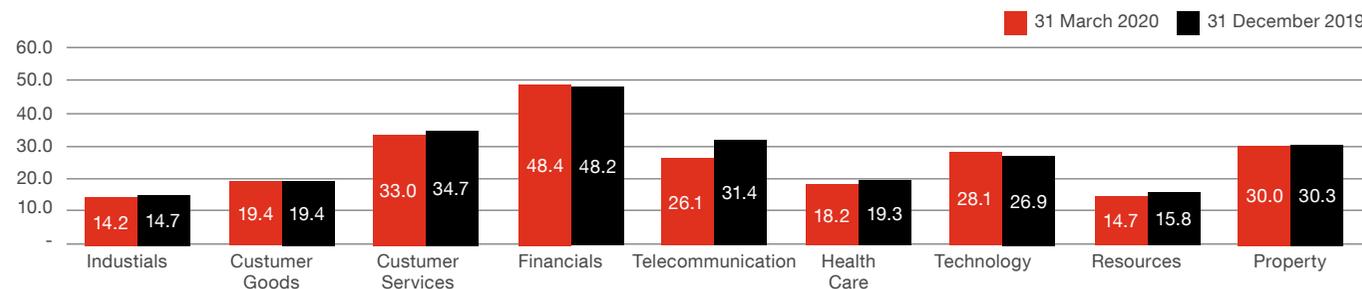
Source: S&P CapitalIQ, IRESS, PwC analysis using the spot P/E multiple for various industries

1 month average P/E Multiples per industry



Source: S&P CapitalIQ, IRESS, PwC analysis using the average monthly P/E multiple for various industries

Average 3 year P/E multiples per industry



Source: S&P CapitalIQ, IRESS, PwC analysis using the five-year average P/E multiple for various industries



Conclusion

Unlike in developed markets, for valuations in South Africa, we do not see any immediate cause to apply adjustments to the Capital Asset Pricing Model. Our view is that the risk-free rate has increased, but as this corresponds to a rise in both implied equity market risk premiums and earnings yields, the use of a higher risk-free rate is justifiable. Market uncertainty and risks have increased, and trading multiples have come down, so conceptually we believe a higher cost of equity is appropriate. However, the extent to which the risk-free rates should increase is less certain. During periods of extreme volatility, caution should be exercised in applying the spot rate. What is also less certain is how long the higher cost of equity and lower equity values will remain.

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