KPMG

Quarterly Brief

11th Edition of the
International Valuation Newsletter
Q1 2020

kpmg.ch/valuation

Dear reader

We wish you a happy New Year, and welcome you to the first edition of our Quarterly Brief in 2020.

We start the new year with heightened tensions in the Middle East as military attacks by the US and Iran took place against each other on Iraqi soil. Despite both countries showing signs of de-escalation, the situation remains unstable and there is a possibility of yet another war in the region.

Some progress was seen on another persistent uncertainty, Brexit. The UK parliament finally approved the withdrawal bill that will see it leave the EU on 31 January 2020. Questions remain about the impact on people and the economy, however, which will largely depend on any trade agreements negotiated by the UK, especially with the EU.

Another saga – the trade dispute between China and the US – shows signals of abating. The two countries have agreed to sign a phase one agreement. This is one reason why many stock markets have risen over recent months. In January 2020, the Dow Jones even broke the 29.000 points line for the first time ever. Despite not holding on to this record, it shows investors' confidence in the economy.

A stable economy is an important aspect for the topic of our focus article in this edition: the valuation of ships. Healthy economic conditions are important for shipping companies to grow and improve profitability, which can lead to higher valuations.

In addition, you can find an update on recent capital market data that are relevant to any valuation analysis.
Here are the latest developments at a glance:

- Major stock market performances: All indices gained on a quarterly and yearly basis, with the NASDAQ outperforming all (+12.2% on a quarterly and +35.2% on a yearly basis)
- EURO STOXX 600 sector multiples: Valuation multiples of most sectors have risen over the past four quarters
- Current risk-free rates for major currencies: Interest rates rose in Q4 2019 for the first time since Q3 2018 for all areas except Switzerland

We wish you all the best and look forward to discussing with you any questions you might have regarding valuation trends and practices.

Yours faithfully

Johannes Post
Partner, Deal Advisory
Global Head of Valuation Services

Rolf Langenegger
Director, Deal Advisory
Valuation / Financial Modelling

Valuing ships: the LTAV approach

The purchase or sale of ships or shipping companies, raising equity or debt capital on the capital markets, collateralizing ship or company-related loans from banks, or considering impairment for external accounting. The reasons to value a ship are many and varied. The Long Term Asset Value (LTAV) – a ship valuation method based on a discounted cash flow model (DCF) – has been in place since 2009. At a time when economic pressures are encouraging shipping companies to make significant changes to their fleets, application of the LTAV is more relevant than ever.

Current market situation

The bankruptcy of South Korea's Hanjin Shipping in 2016 marked the peak of the global crisis in the container shipping industry. Some news outlets compared the event to the failure of Lehman Brothers in 2008.

Huge overcapacity in the market has led to increasingly intense price competition, pushing down freight rates. As a result, profitability of many industry players has fallen significantly. This ultimately led to the bankruptcy of Hanjin Shipping, the world's seventh largest container shipping line.

The market has since consolidated. While the top five container shipping companies had a market share of 31 percent in 2000, this had risen to 65 percent by 2019. But despite consolidation helping companies to achieve higher freight rates, the outlook remains unstable.

Political uncertainties such as the trade war between China and the US, Brexit and tensions in the Middle East could adversely affect the global economy, and the shipping industry in particular.

New environmental regulations have added to pressure on the industry. A new regulation came into force this year that requires shipping companies to use more environmentally friendly fuel that is more expensive. Smaller companies in particular may not be able to pass additional costs on to customers due to their relatively low bargaining power.

Even in the face of such uncertainties, the industry is expected to grow – although slowly. To improve profitability, many companies are scrapping parts of their current fleet and ordering larger ships. This should reduce average costs per container.

Such changes to fleets is just one example of why valuation in the shipping industry is highly relevant at the moment.

Valuation of ships using the LTAV approach

As with any asset, the value of a ship should be determined solely on the basis of future profitability, i.e. its capacity to generate financial surpluses. The LTAV approach is a discounted cash flow weighted average cost of capital (WACC) approach based on the future free cash flows that the valuation object can generate through use. The future free cash flows are discounted to the valuation date using a risk-equivalent discount rate.

The objective of the LTAV approach is to provide a valuation basis that is independent of price fluctuations and oriented to a ship's long-term earnings potential. This approach is widely accepted in the industry, as it is a conclusive concept that leads to resilient results even in times of crisis. Moreover, it would not be clear why different valuation principles should be applied to ships than to real estate or companies, for instance.

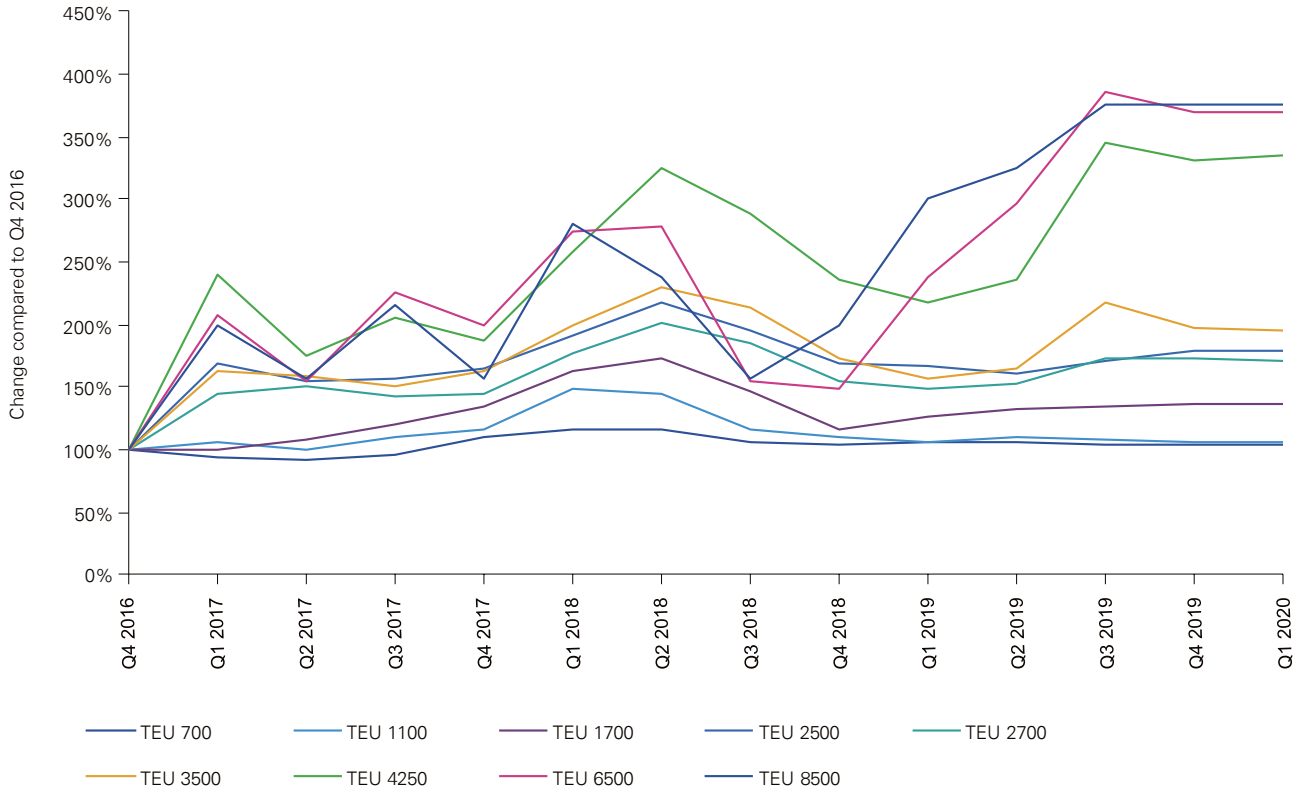
Determining cash flows

To determine the cash flows relevant to a valuation, all income and expenses relating to the ship's operation are to be estimated as realistically as possible using operating value drivers. The charter rates achievable in the market wield a particular influence over a ship's value. The market is still recovering from the crisis that peaked in 2016 with the bankruptcy of Hanjin Shipping that year. The following chart illustrates the volatility of prices over recent years.

For the duration of an existing charter contract, the charter rates are to be applied in accordance with the provisions in the contract. For the time following expiry of the charter contract, the follow-up charter rates expected at expiration should be applied. By contrast, a simplified reference to an average of recent (e.g. ten) years is not appropriate for future expectations. This is because a valuation requires relevant data that is future-oriented. Volatility over recent years has made historical data even less meaningful for this purpose.

Charter rates should rather be forecast on the basis of current charter rates in the market for the respective ship type. It is important to note that it can often be several years before existing charter contracts expire. In this case, currently achievable rates must be projected into the future. Any forecast should take account of the respective market situation.

Container Freight Rates over time



Source: Harper Petersen, KPMG analysis

For instance, possible rate increases should be considered with caution due to existing overcapacity at present.

As charter rates are usually paid on a daily basis, the corresponding operating days should be specified. The maximum possible anniversaries should not be used, but always take into account a laytime due to technical reasons or overhauls or repairs.

Operating costs (e.g. crewing expenses) for the ongoing operation of the ship are to be considered as major expenses. Operating costs can be easily derived regularly from the ship's past operations, taking inflation into account if necessary. Cost reduction measures should only be reflected if they have been planned sufficiently concretely and the effects are realistic. If such measures involve (advance) payments, for example for conversions to the ship, these should also be recorded. Moreover, management costs must be incorporated. These are to be calculated depending on the contract structure as a function of charter revenues or – as has increasingly been the case in recent years – as a fixed fee per year. The class costs for the ship, i.e. the costs of the recurrent assessment of its structural condition, are to be recorded in full in the period in which they are incurred – with reduced operating days in years in which the class is due.

Estimating the residual value and other valuation parameters

Finally, the ship's residual value at the end of its economic life must be estimated. This is determined based on the weight of the ship and the expected price of steel. In practice, the current price of steel is often used for simplification purposes due to a lack of information on steel price trends. Travel costs for scrapping should also be taken into account where appropriate. In a ship valuation, the relevant periods are defined by the ship's remaining useful life. Due to the oversupply of ships, it is currently recommended that the remaining useful life should be total useful life, which is less than the technical useful life.

The WACC is to be used for discounting. In accordance with the Capital Asset Pricing Model, it includes

- Cost of equity – consisting of a risk-free basic interest rate and a risk premium that comprises the general market risk premium and the (asset-) specific beta factor, and
- The cost of debt – consisting of a risk-free basic interest rate plus a risk premium (spread).

Limitations of single-value models

The above-mentioned value drivers are to be predicted over a comparatively long period of use of up to 25 years in the context of a ship valuation. In addition, some of these value drivers have been subject to significant fluctuations in the past. The current market situation means that considerable planning uncertainty can be expected going forward. The single-value planning models frequently used in practice merely add up the income and expenses once they have been determined. Even though the single-value planning model is suitable for standard valuations, it reaches its limitations in more complex valuations. The reasons for this include single-value planning models not taking into account the fluctuation margins of the value drivers and distribution curves within these fluctuation margins.

The advantages of multi-value models

Instead of single-value models, multi-value planning models should be used when valuing ships. Monte Carlo simulations are especially suitable for mathematically mapping value drivers' fluctuation margins. For this purpose, the bandwidths of the main value drivers, such as transport volumes, charter rates, bunker prices and exchange rates, are to be estimated after a detailed analysis of internal and external information. Based on the analysis of the value drivers, a distribution curve can also be determined for the respective value driver within its value range.

By using a multi-value planning model, planning uncertainty can be comprehensively taken into account in the valuation and a resilient value range for the ship determined based on this. Furthermore, Monte Carlo simulations allow the (maximum) influence of individual value drivers to be separated in the valuation.

In such times of uncertainty, confidence in valuations is critical. Due to their neutrality and expertise, an external expert can make a valuable contribution to the acceptance of the valuation results by all parties involved, both in the analysis and sensitization of the planning as well as in the valuation itself.

A ship assessment carried out and documented in accordance with the principles set out in this article may further increase stakeholders' acceptance of the LTAV approach. Potential sellers and purchasers of ships receive a comprehensible basis for negotiations to determine the purchase price; lenders have a reliable basis for collateralizing loans; and accountants have comfort over the values stated in the balance sheets.

Capital market data

In this section we provide a selection of key financial market data, covering:

- Comparison of major stock market performances for the 12 months ending 31 December 2019
- EURO STOXX 600 sector multiples
- Risk-free rates for major currencies
- Country risk premiums and inflation forecasts for the BRIC countries

Major stock market performances: Year-end rally across all indices

Investors who invested at the beginning of 2019 can look back on a successful year for stock markets. All the indices we cover gained substantially on a yearly basis. Gaining 11.8 percent, the Ibex 35 was the 'worst' performer.

While the MSCI World moved very little in the third quarter, investor demand rose again in the last few months of 2019, leading to a quarterly gain of 8.2 percent. The index gained 25.2 percent over the year as a whole.

The patience of investors who kept the MSCI Emerging Markets in their portfolio paid off. The index gained more than 11 percent in the final quarter of 2019. Offsetting the negative results of the previous quarter, this led to an overall performance of 15.4 percent in 2019.

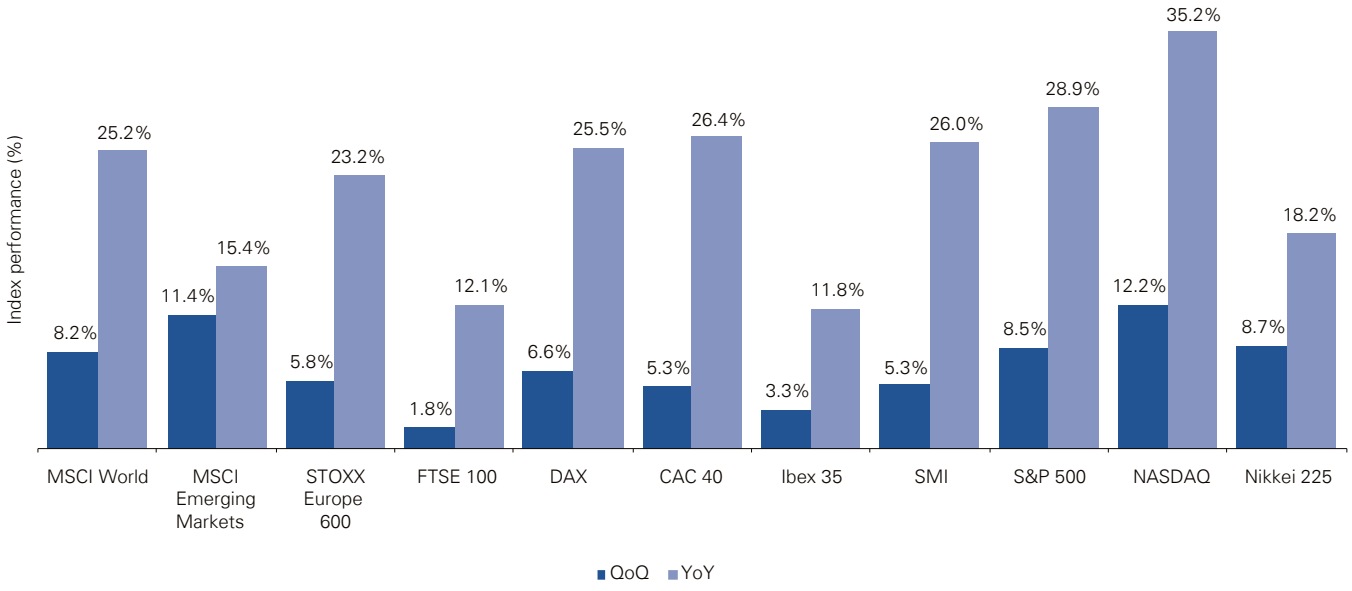
The NASDAQ was the best-performing index both in Q4 (+12.2 percent), and on an annual basis (+35.2 percent).

The S&P500 performed second best on an annual basis with a gain of 28.9 percent. Even though the results of the CAC40 (+26.4 percent), the SMI (+26.0 percent), and the DAX (+25.5 percent) were close to the S&P performance, it shows that investors favored US stocks over European stocks in 2019.

The FTSE 100 made up some of the third quarter's losses. However, with a gain of 1.8 percent in quarter four, it was the group's underperformer that quarter. The index gained 12.1 percent on a yearly basis.

Performance of leading indices

31 December 2018–31 December 2019



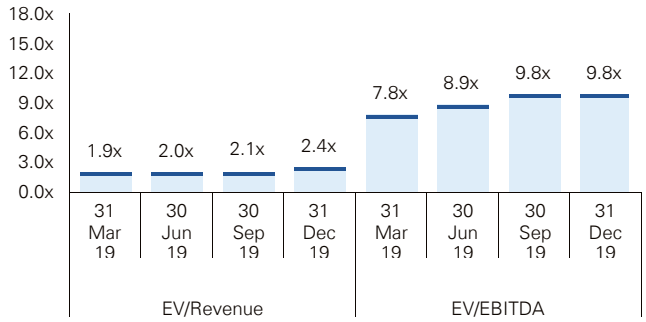
Source: Capital IQ, KPMG analysis

EURO STOXX 600 sector multiples: Real estate sees the biggest increase in valuation multiples

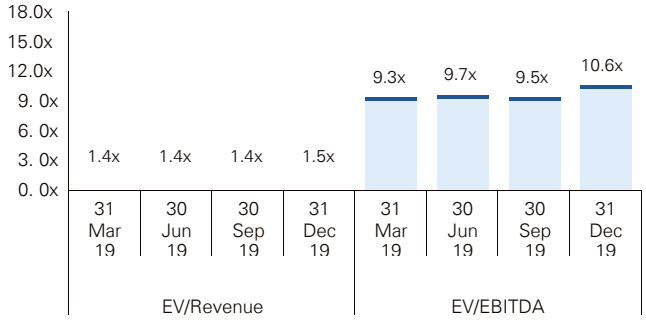
The enterprise value (EV) multiple states the market value of the business in relation to an appropriate base metric. Commonly used EV multiples are revenue and EBITDA. The numerator (EV) and denominator (revenue, EBITDA) represent all investor claims on the business.

The Euro STOXX 600 sector overview of trading multiples displayed various valuation trends. Based on EV/EBITDA, most sectors in Q4 2019 experienced an increased multiple level (consumer discretionary, healthcare and real estate, among others) while several EV/revenue multiples remained mostly flat (e.g. consumer discretionary, IT, and materials). The largest increases in EV/EBITDA was seen in healthcare (plus 1.3x) and real estate (plus 1.6x). Even before this jump, these two sectors had the highest multiples. As of 31 December 2019 their EV/EBITDA multiples amounted to 16.3x for healthcare and 29.8x for real estate.

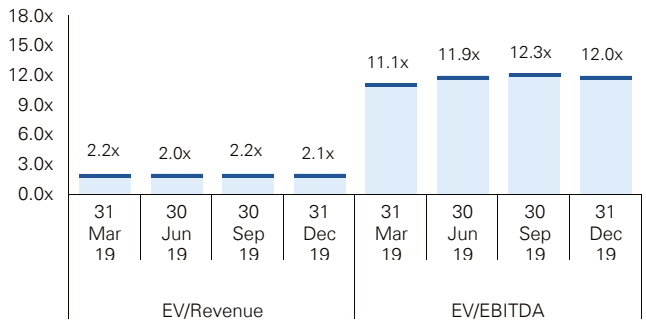
Communication Services Median[1]



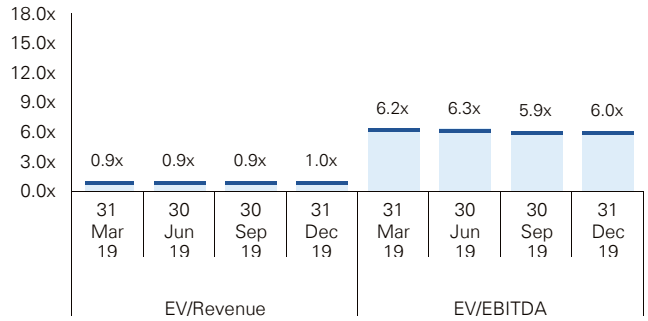
Consumer Discretionary Median



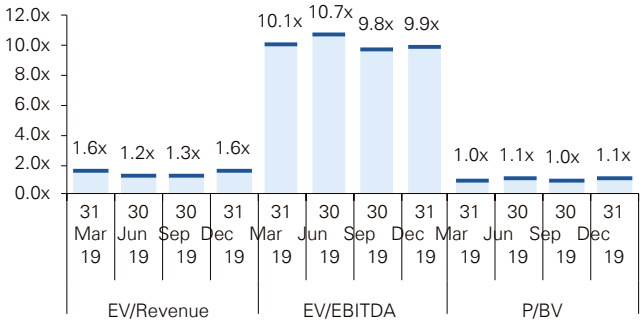
Consumer Staples Median



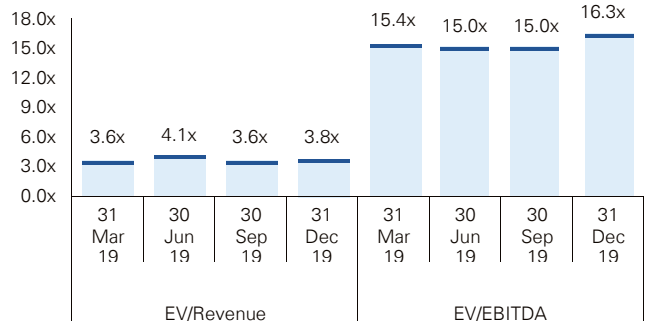
Energy (Oil and Gas) Median



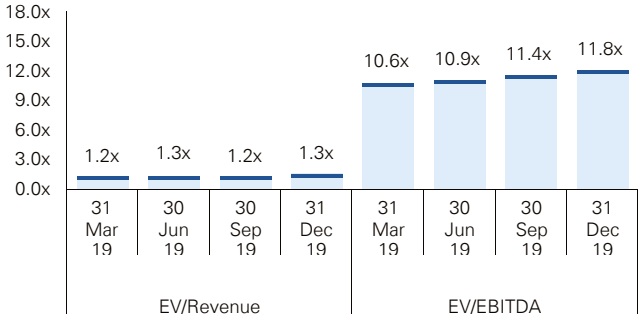
Financials Median[2]



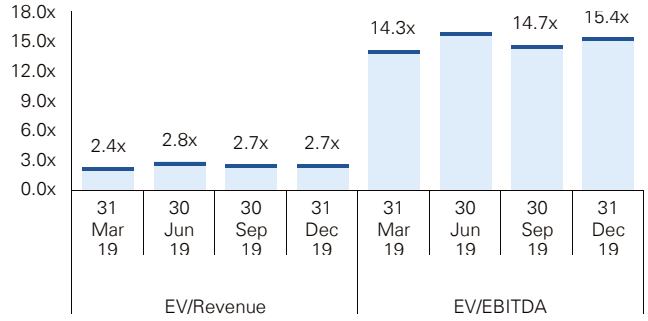
Health Care Median



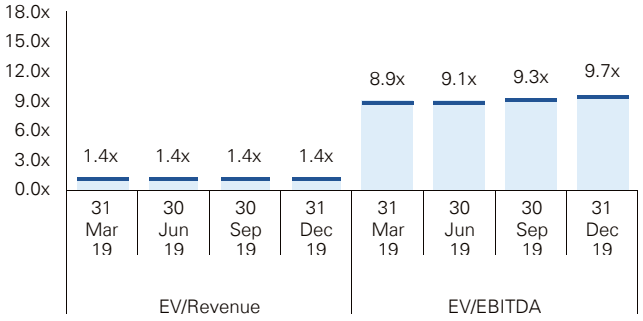
Industrials Median



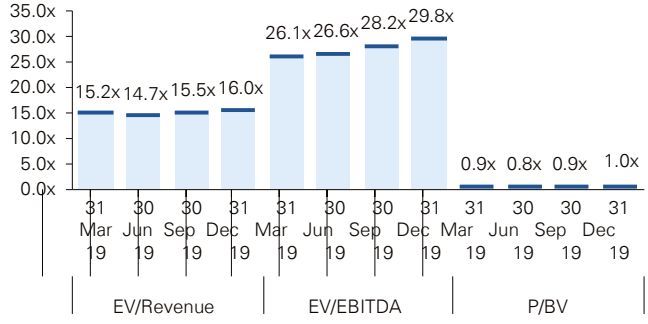
Information Technology Median



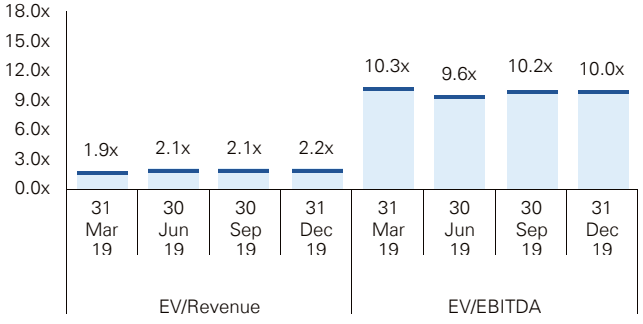
Materials Median



Real Estate Median



Utilities Median



Source: Capital IQ, KPMG analysis

[1] Multiples can deviate compared to previous editions, as the index composition can change and companies revise their financial statements.

[2] Financial services companies differ from many other companies in how they operate. Debt acts more like 'raw material' than operational capital for financial services companies. A common valuation metric used by analysts evaluating such firms is the price to book (P/B) ratio.

Risk-free rates: The end of the zero-interest rate environment?

The risk-free rate (or base rate) can generally be broken down into two key components that seek to compensate the investor: the first for expected inflation and the second for deferred consumption. The base rate is considered to be free of risks except for risks embedded in the underlying currency and risks related to investments in the particular country (including general political, legal, regulatory and tax risks, as well as the risk of a moratorium). As no investment is truly risk free, the risk-free rate is typically approximated by reference to the yield on long-term debt instruments issued by presumably financially healthy governments. The historical risk-free rates for Germany, the Eurozone, the US, the UK and Switzerland are below.

It appears as though interest rates' downward trend stopped in the last quarter of 2019. While in the third quarter many areas showed negative interest rates that were floored at 0.0 percent, the situation for investors seems to improve. All interest rates we present here rose slightly except for Switzerland, where it remains at 0.0 percent. The largest increase was in the Euro-countries where the interest rate increased from 0.0 percent to 0.4 percent.

Risk-free rates

Date	Euro-countries *EUR*	Germany *EUR*	UK *GBP*	Switzerland *CHF*	USA *USD*
31/03/2015	0.69%	0.70%	2.39%	0.43%	2.66%
30/06/2015	1.79%	1.65%	2.80%	0.79%	3.31%
30/09/2015	1.51%	1.38%	2.58%	0.81%	3.06%
31/12/2015	1.70%	1.55%	2.77%	0.70%	3.17%
31/03/2016	1.03%	0.90%	2.39%	0.25%	2.81%
30/06/2016	0.46%	0.49%	1.85%	0.00%	2.50%
30/09/2016	0.53%	0.47%	1.61%	0.00%	2.48%
31/12/2016	0.97%	0.95%	2.03%	0.35%	3.06%
31/03/2017	1.25%	1.24%	1.88 %	0.32%	3.27%
30/06/2017	1.39 %	1.33%	2.02%	0.39%	3.04%
30/09/2017	1.40 %	1.38%	2.05%	0.45%	3.04%
31/12/2017	1.34%	1.34%	1.89 %	0.36%	2.89%
31/03/2018	1.25%	1.24%	1.79%	0.56%	3.08%
30/06/2018	1.09%	1.12%	1.83%	0.51%	3.00%
30/09/2018	1.13%	1.15%	1.87%	0.61%	3.10%
31/12/2018	0.90%	0.94%	1.91%	0.37%	3.17%
31/03/2019	0.67%	0.65%	1.65%	0.17%	2.96%
30/06/2019	0.35%	0.33%	1.56%	0.02%	2.71%
30/09/2019	0.00%	0.00%	1.05%	0.00%	2.25%
31/12/2019	0.40%	0.30%	1.30%	0.00%	2.50%

Source: KPMG analysis
Approach: Determination of a present value-equivalent uniform interest rate based on the yield curve of the particular central bank

Country risk premium: Risk premium for China has fallen again

The country risk premium is a measure of risk that accounts for incremental political, economic, legal, liquidity and other risks that businesses face in less developed capital markets. Country risk has become increasingly more relevant to investors recently due to many changes in the global economy in regards to restrictive trade policies that have made investment performance in previously stable countries less predictable. KPMG's Valuation practice has been analyzing and measuring country risk for 15 years and covers more than 150 sovereign states in a proprietary KPMG model.

The country risk premiums for Brazil, Russia, India and China are set out below as of 31 December 2019 for an investment period of between 0.5 and 2.0 years. When compared to our September 2019 update, the two-year country risk premiums for Brazil, Russia and India remain unchanged. The shorter-term country risk premiums for Brazil, Russia and India have decreased slightly compared to the previous quarter. For China, on the other hand, the country risk premiums over all time horizons have decreased significantly compared to the third quarter of 2019 and ended the year at a similar level to June 2019.

Country risk premium

	31/12/2019		
	0.5 year	**2.0 years**	**2.0 years**
Brazil	2.5%	2.6%	2.7%
Russia	1.7%	1.9%	1.9%
India	1.7%	1.8%	1.8%
China	0.4%	0.5%	0.5%

Source: KPMG CRP study

Growth rates: No updates since last quarter

Growth rates are a major component of the terminal value calculation for the discounted value method and are based on country-specific inflation forecasts. The growth rates for Brazil, Russia, India and China are based on the International Monetary Fund's inflation forecast for the years 2020 to 2024.

Since our last edition the IMF has not updated its inflation forecasts. Therefore we present the IMF's expectations as of October 2019. In general, inflation rates of BRIC countries are expected to be relatively stable over the course of the next years. While Russia and India have the highest long-term inflation forecasts with 4.0%, China marks the lower end with 3.0% in 2024.

Inflation forecast	2020	2021	2022	2023	2024
Brazil	3.5%	3.8%	3.6%	3.5%	3.5%
Russia	3.5%	3.9%	4.0%	4.0%	4.0%
India	4.1%	4.1%	4.0%	4.0%	4.0%
China	2.4%	2.8%	2.9%	3.0%	3.0%

Source: IMF

Contacts

Didier Saintot
Partner, Deal Advisory
Head of Valuation and Financial Modelling

+33 1 55 68 93 13
dsaintot@kpmg.fr

Annelie Vidal
Director, Deal Advisory
Valuation and Financial Modelling

+33 1 55 68 87 61
annelievidal@kpmg.fr

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received, or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation. The scope of any potential collaboration with audit clients is defined by regulatory requirements governing auditor independence. If you would like to know more about how KPMG AG processes personal data, please read our Privacy Policy, which you can find on our homepage at www.kpmg.ch.

© 2020 KPMG AG is a subsidiary of KPMG Holding AG, which is a member of the KPMG network of independent firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss legal entity. All rights reserved.