

Measuring the Fair Value of Private Debt and Equity Investments In Times of Significant Uncertainty

Frequently Asked Questions

Alternative asset managers (GPs) and their investors (LPs) have financial reporting requirements, internal management needs (asset allocation, incentive compensation, portfolio construction, etc.) and a fiduciary duty to measure and report investments at “fair value.” Fair value is defined as the “price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.” (FASB ASC Topic 820/IFRS 13)

The global COVID-19 pandemic and the extended public market sell-off impact the judgments which must be exercised in estimating fair value of non-traded and infrequently traded investments at March 31, 2020. We have received a number of questions focused on exercising these judgments. These questions and answers are provided below. While reference is made to FASB ASC Topic 820, the answers apply equally to fair valued estimated for IFRS purposes using IFRS 13.

It should be noted that the answers provided are general in nature. Specific fair value conclusions will be based on individual facts and circumstances. We welcome the opportunity to assist you with answers to specific questions concerning specific investments.

Please contact us should you have any further questions.

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Questions / Answers

D&P Published Risk Guidance

1. Will Duff & Phelps update its published Equity Risk Premium (ERP) and Risk-Free Rate guidance prior to March 31, 2020.

Duff & Phelps updated its recommended U.S. ERP and Risk-Free Rate guidance, effective as of March 25, 2020. ERP moved from 5% to 6% and the accompanying Risk-Free Rate remained constant at 3%.

Fair Value Concepts

2. Why would I adjust my enterprise value if the impact of the COVID-19 pandemic and Q1 2020 public market sell down is only expected to be temporary?

Fair value is estimated using market participant assumptions as to the orderly transaction price at the measurement date using information that is known and knowable at that date. Therefore, at March 31, 2020 a view must be taken as to the length and depth of an anticipated economic downturn. At March 31, 2020 it cannot be known when the public market will return to pre-downturn levels or the full economic impact of government actions to address the pandemic. Therefore, even if transactions are not taking place, judgement must be exercised to determine the amount that would be paid for the investment in an orderly transaction at the measurement date. Market participants would factor in the impact of additional risk, uncertainty, volatility and the potential for a short- or long-term economic recession.

Further, market participants will consider the impact of cash shortfalls during the crisis and their impact on the ability of the investee company to recover/restart post crisis/recession.

3. Do control premiums and discounts for lack of marketability tend to increase in times of crisis; for example, 2008?

The concepts of control premiums and marketability discounts are often misunderstood and misapplied in the context of valuing investments in private equity. While there may be exceptions, generally, control buyers and minority buyers pay the same price at entry and receive the same price at exit. Further the fact that such investors are investing in a non-traded security is embedded in the price paid. Therefore, when inputs are calibrated it would not be appropriate to add a control premium, minority discount, or marketability discount for a private investment (See AICPA PE/VC Valuation Guide for further guidance). In times of a crisis, the fair value question remains the same—what would a market participant pay in an orderly transaction at the measurement date? They may pay a premium or a discount to some other price, but they don't determine a price and then add a premium or deduct a discount.

4. If a treatment or vaccine for COVID-19 is developed quickly and the public markets return to pre pandemic levels by June 30, 2020, how will it impact March 31, 2020 fair value estimates?

Fair value is determined based on what is known and knowable at the measurement date. At that point in time, it cannot be known or knowable when or if the public markets will increase (or further decrease) in value. Therefore, fair value is based on the market conditions and market participant expectations at the measurement date.

5. How would you take into account the Q1 2020 developments in a valuation dated December 31, 2019 if not yet completed?

As stated in 4 above, fair value is determined based on what is known and knowable by a market participant at the measurement date. While there was some indication that a region in China would be impacted by a new virus in December of 2019, the global magnitude of the current pandemic and public market sell off was not known or knowable at December 31, 2019 and as such would not impact December 31, 2019 fair value estimates. However, if the pandemic and market sell down during Q1 of 2020 identified information that should have been known or knowable at December 31, 2019, such information would impact fair value estimates at December 31, 2019.

6. How should we think about “calibration” given current market conditions?

The beauty of calibration is that it often removes significant subjectivity from difficult to support subjective assumptions. Implied multiples or discount rates are derived from the pricing of market deals relative to recent or expected performance. The paramount consideration is what has changed since the entry/transaction date.

Investments closed during the quarter are often marked at the invested capital amount at the quarter-end valuation date. In this situation, that assumption must be tested and should not be considered a safe harbor, in particular for transactions that closed early in the quarter and/or where the outlook for the investment has changed.

Clearly there is more uncertainty in the market today, and certainly more than what was considered when pricing past transactions. With this increase in uncertainty, it is appropriate to consider if the implied discount rates (“alphas”) or implied market multiples / relative market capitalization changes (“deltas” / discounts or premiums from comparable companies) have changed for the subject company relative to the market data. If the subject company should be relatively more sensitive to recent market conditions, “alphas and deltas” may appropriately increase. Alternatively, if the subject company is less sensitive to market conditions, it may be appropriate to narrow these calibration factors. Either way, what is as important as assessing these changes, is to document reasons why calibration factors are adjusted relative to market data.

Recent Transaction Prices

7. Some PE & VC firms have policies that hold their values flat to cost for recent transactions. Is it fair to say, any investment closed prior to emergence of the pandemic needs to be revalued, and a deviation from cost is appropriate?

Such a policy is not necessarily congruent with fair value requirements. At all measurement dates, with or without market dislocation, fair value must be determined. Cost is not necessarily equal to fair value, though fair value may equal cost. At March 31, 2020 depending on the facts and circumstances fair value may be equal to a recent transaction price. However, it cannot be assumed that fair value is equal to the recent transaction price without thorough supporting analysis. The key question would be whether a market participant would pay the same amount at March 31, 2020 as they did at closing of the recent transaction. In some cases, the answer may be yes, in many cases the answer would be no given current market conditions.

8. If a recent financing round was completed within the last few months, would this pricing be a reasonable basis to use in estimating fair value in the light of broader market conditions?

Fair value must be determined at each measurement date. In the current environment, at least three critical questions need to be answered for early stage/pre-revenue/pre-earnings companies:

1. To what extent do the public health actions to address the pandemic impact the portfolio company's current and future customers, revenue stream (timing or magnitude), its supply chain, cash burn, or its operations (including employee matters)?
2. The actions being taken to address the pandemic are having and are likely to continue to have a significant impact on the global economy. Therefore, what is the potential impact on the investee company's market, product, or service?
3. What impact does the current public market sell-down and increased uncertainty have on the return expectations (timing and magnitude) of market participants?

While it may be premature to quantitatively answer these questions, qualitative answers are obtainable. The answers to these questions will provide assistance in exercising judgment to determine the direction and magnitude of a change in fair value. The lack of quantitative updates does not negate the ability nor requirement to adjust fair value. The AICPA PE/VC Guide provides significant guidance on valuing early stage guidance using scenario analysis and other techniques..

9. What if the current market conditions represent a fire sale condition?

“Fire Sale” is not a defined term in the context of fair value and financial reporting. The question which needs to be addressed is whether observable transactions are considered orderly or not orderly. FASB defines an orderly transaction as: “A transaction that assumes exposure to the market for a period before the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets or liabilities; it is not a forced transaction (for example, a forced liquidation or distress sale).” If transaction data is not orderly it would receive little, if any, weight in estimating fair value. If observable transaction data is considered orderly, it would receive at least some if not significant weight in estimating fair value.

FASB ASC Topic 820 paragraph 820-10-35-54I states: “The determination of whether a transaction is orderly (or is not orderly) is more difficult if there has been a significant decrease in the volume or level of activity for the asset or liability in relation to normal market activity for the asset or liability (or similar assets or liabilities). In such circumstances, it is not appropriate to conclude that all transactions in that market are not orderly (that is, forced liquidations or distress sales). Circumstances that may indicate that a transaction is not orderly include the following:

1. There was not adequate exposure to the market for a period before the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets or liabilities under current market conditions.
2. There was a usual and customary marketing period, but the seller marketed the asset or liability to a single market participant.
3. The seller is in or near bankruptcy or receivership (that is, the seller is distressed).
4. The seller was required to sell to meet regulatory or legal requirements (that is, the seller was forced).
5. The transaction price is an outlier when compared with other recent transactions for the same or a similar asset or liability..

A reporting entity shall evaluate the circumstances to whether, on the weight of the evidence available, the transaction is orderly.”

Liquidity

10. In a market where there is effectively no liquidity, and no appetite to purchase private investments, how can we accurately reflect fair value? When one part of the definition of Fair Value is a willing market participant, if none exists, how does one ascertain fair value as of the measurement date?

Fair value is defined as the “price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.” (FASB ASC Topic 820/IFRS 13) Further FASB ASC Topic **820-10-35-6C** states: “Even when there is no observable market to provide pricing information about the sale of an asset or the transfer of a liability at the measurement date, a fair value measurement shall assume that a transaction takes place at that date, considered from the perspective of a market participant that holds the asset or owes the liability. That assumed transaction establishes a basis for estimating the price to sell the asset or to transfer the liability.”

A proxy for how market participants may be thinking about the value of investments is to use the perspective of the investment manager’s own deal team—how would your deal team determine the price they would pay in these market conditions for the investment being valued?

11. Does market dislocation make some securities “thinly traded”? What should we do?

Accounting standards (FASB ASC Topic 820/ and IFRS 13) define securities as being either “actively traded” (sufficient volume and frequency to determine a price) or not actively traded. Thinly traded is not a term defined by or used in the accounting standards.

Accounting standards give preference to observable inputs when estimating fair value. For actively traded securities, fair value is determined by rule as $P \times Q$, where P is the price observed in the active market and Q is the number of shares/units owned. Discounts to $P \times Q$ are allowed only in limited circumstances (such as where there is a legal or contractual restriction that is an attribute of the shares). Specific guidance is provided where there has been a significant decrease in the volume or level of activity of actively traded shares.

For shares which are not actively traded but where fair value-based transactions are observable, some or significant weight, depending on the facts and circumstances, should be given to the observable transaction price.

If shares cease to trade, then they are no longer actively traded and fair value would be determined the same way as other non-traded or infrequently traded investments

Valuation Techniques

12. Which valuation technique do you recommend when estimating fair value as of March 31, 2020?

The macro valuation techniques used to estimate fair value will generally remain consistent with prior measurement dates. While a market approach and an income approach are generally used, the current environment may require a focus on indicators such as the relative movement in market capitalization and enterprise value to inform the magnitude of the fair value change at the investment level. It is unlikely that cash flow projections have been updated in outer years as many deal teams are in preservation mode—what is the impact on Q1 & Q2 and is there sufficient liquidity to weather a recessionary storm?

At March 31, 2020 market multiples have moved significantly over the quarter and significant uncertainty exists with respect to company performance and achieving projections. Therefore, a combination of modifying projections and historical results, to the extent possible, combined with adjusting factors such as multiples and discount rates to reflect increased risk and uncertainty is required. Further, recent transaction multiples may or may not take into account the current market environment and therefore may or may not need adjustment depending on the individual facts and circumstances.

13. When valuing warrants and options, all other things being constant, increased volatility will theoretically INCREASE the value of our private warrants. Does this make sense and how should we do deal with any unintended consequences of option pricing models?

If you hold all else constant and increase volatility value derived by an option pricing model would increase. However, in this environment you would not hold all other inputs constant. Duration could change, and most importantly the stock price input will likely be significantly less. It may continue to be appropriate to use an option pricing model to determine the fair value of options and warrants in the current environment, but only after adjusting all applicable inputs to the model.

Valuation Inputs

14. Do cash flow projections need to be updated, or can we just consider the current situation as temporary?

A market participant would expect to have available up-to-date projections at any point in time. To the extent projections are stale, or have not been updated for current developments, a market participant would consider the cash flows riskier and would likely decrease the multiple or increase the discount rate used in estimating the amount they would pay in an orderly transaction.

At March 31, 2020 depending on the industry and specific facts and circumstances associated with the investee company, it can be anticipated that Q1 2020, Q2 2020 and potentially more medium- and long-term results will be significantly impacted. Such expectations should be reflected in the March 31, 2020 fair value estimate. It would be an exception,

rather than a rule, to assume that there is no impact of the crisis on March 31, 2020 fair value. Further, appropriate documentation and support for such a conclusion would be necessary.

15. What guidance do you have on how to document or validate inputs? Most of these are going to be heavily adjusted on qualitative factors based on incomplete information that a deal team may have at March 31, 2020.

Investee company results will not be available at March 31, 2020. However, in many cases the deal team is having real-time discussions with portfolio company management. They will know whether or not the business is still operating, what the potential impact on Q1 will be, expectations for Q2 and beyond given different scenarios. The qualitative and quantitative information obtained from investee company management and the deal team would be documented the same as any other qualitative and quantitative inputs used in estimating fair value.

One approach to assist in corroborating the magnitude of fair value changes is to consider the directional and percentage change in market capitalization and total enterprise value of comparable publicly traded companies.

16. Given that currently Stock Markets are going up and down on a daily basis, would March 31, 2020, a single day, be a good reference for Fair Value?

Actively traded securities are valued by rule at P*Q based on the closing price at March 31, 2020. See question 11. Non-traded and infrequently traded investments would be valued using inputs consistent with market participant perspectives which are more likely to take into account the general market conditions rather than market results from a specific day. To the extent that there are observable fair value based transactions for non-actively traded securities some, or significant, weight should be placed on the transaction price depending on the facts and circumstances.

17. Should the forward LIBOR/EURIBOR rates be normalized to factor in the current quantitative easing policies implemented by the FED and Central Banks globally?

Forward rates should be applied consistent with market participant assumptions. In the current crisis situation, it would generally not be appropriate to vary only one input while holding others constant. For example, while the risk-free rate may be deemed to be decreasing, company specific risk and equity risk is likely increasing.

18. How should we consider lack of liquidity, potential covenant breaches, customer non-payments, etc.?

The ability of an investee company to meet its obligations is a critical component in assessing fair value. At March 31, 2020, at a minimum, qualitative judgements are obtainable with respect the likelihood and impact of a loan covenant breach, the likelihood of customers delaying payments or nonpayment and the overall impact on meeting cash requirements. All such liquidity information would impact the fair value conclusion. Further, the time and working capital requirements to re-start operations for impacted companies should be considered. In many cases, a scenario analysis, weighting various potential outcomes including risk of default, may be appropriate to assist in estimating fair value.

19. Given the uncertainty on the cash flow projections, should we therefore factor the current situation by increasing the discount rates?

Visibility as to Q1 and Q2 2020 performance and cash flows is to some extent determinable, yet still uncertain. Visibility as to cashflows beyond that point becomes increasingly uncertain—what will be the length of the health crisis; what will be the length of public health actions which limit physical movement with its accompanying economic impact; what will be the impact of government and central bank intervention? None of these questions can be answered with specificity. Therefore, projections should be adjusted to the extent possible, and discount rates / multiples should be adjusted to take into account the additional risk based on best informed judgments as of March 31, 2020. Further the discount rate and market multiple may not be able to take into account all risks or outcomes. A scenario analysis weighting various outcomes may be required depending on the facts and circumstances.

20. Given the heightened uncertainty and risk observed in the markets today, adding a risk premium may be justified. How would you suggest estimating that premium?

Facts and circumstances applicable to the specific portfolio company, its industry, geography, liquidity, size, etc. will drive the judgement required to estimate the additional company specific risk premium required. Further market participant assumptions as to the other factors such as the risk-free rate, size premium, country risk and equity risk should be used in developing an overall discount rate. The magnitude of the company specific risk premium will be related, up or down, to the reliability and achievability of forecasts.

21. In situations where we are using both public market comps and precedent transaction comps in valuing private investments, how should we think about the appropriate weighting? Any guidance on shifting the weighting more towards precedent transaction comps and away from public market comps?

Individual facts and circumstances will drive the weight placed on public market comparable companies and comparable transactions. In some cases, it may be appropriate to place little if any weight on a recent transaction, if the transaction price would not be representative of a price given current conditions. In other cases, a recent transaction price may continue to provide an indication of fair value as the investee company may be insulated from or be advantaged by the current crisis.

22. What will be the impact on fair value if a portfolio company's management or employees become ill?

The financial impact of management and employee illness should be considered from several perspectives including but not limited to:

1. What actions will portfolio company management voluntarily take to support employees, including key persons, who cannot work due to illness,
2. What actions will portfolio companies be required to take to comply with legal regulations such as the recently enacted Families First Coronavirus Response Act?
3. What impact will employee absenteeism due to illness have on the ability to generate revenue and deliver products or services?

23. How do you feel explicit or implicit government support should/can be reflected in current valuations?

Central banks have taken action and may take additional action. Governments have taken action and are expected to take additional action through fiscal stimulus which may be directed to specific industries, companies, and individuals. The extent of such actions which are known or can be reasonably expected at March 31, 2020 should be taken into account in estimating fair value. That said, the impact of such actions on public markets and the economy as a whole remains uncertain. Therefore, it would not be appropriate to assume that government and central bank actions will directly counteract potential decreases in portfolio company cash flow and increases in risk even though such actions might mitigate the depth, breadth and duration of economic impact brought on by the crisis.

24. Should we be thinking of COVID-19 as a 3-month vs. 18-month event? (Understood this is one of the unknowable's, but our forecasted cash-flows really hinge on this assumption)?

Informed judgement will need to be applied as of March 31, 2020. At that point in time there will be information which can help direct the minimum amount of time the economy will be impacted. The important consideration is not necessarily when the COVID-19 disease will be controlled, but the length and depth of the economic impacts of the steps taken to control COVID-19. Developing scenarios with, for example 6-, 12- and 18-month durations may be appropriate. Judgment as to that time frame will be applied at March 31, 2020 and such judgment will be updated based on new facts and circumstances at subsequent measurement dates.

25. How should broker quotes and pricing service prices be used in the current environment?

March 31, 2020 is no different than other measurement dates. If broker quotes are not actionable for the unit of account being valued and vendor pricing is not reflective of contemporaneous and actionable transactions, then additional analysis

is required to estimate fair value. Anecdotal evidence as of this writing indicates that broker quotes are becoming less available and may no longer provide reliable indications of current fair value. Therefore, additional analysis which includes preparing a discounted cash flow model or other techniques to estimate fair value may be required at March 31, 2020.

26. How do you determine the magnitude of a company specific risk premium or alpha?

When inputs used in an income approach are properly calibrated, the company specific risk premium is known as of the calibration date. The calibrated alpha would change at subsequent measurement dates depending on the facts and circumstances. Therefore, the starting point would generally be the prior company specific risk premium used at the prior measurement date. Depending on the facts and circumstances and the expected impact of the crisis on the cash flows of an individual portfolio company, the magnitude of the incremental company specific risk premium will vary. Informed judgment will be required to conclude on a reasonable increase in the company specific risk premium or alpha.

27. With artificially low government bond yields, what is the impact on cost of capital?

Lower government bond yields should not be viewed in isolation. In the current environment, market participant's perception of risk has generally increased. While the risk-free rate may have decreased, company specific risk and equity risk have likely increased. On a combined basis, in general, it can be expected that discount rates will increase depending on individual facts and circumstances to reflect a market participant view of risk.

28. What if government discount rates go negative?

Some countries have been experiencing negative government discount rates for some time. Negative rates would be one component of a market participant view into the overall discount rate that would be used when applied to cash flows in estimating what a market participant would pay in an orderly transaction. As described above, all factors need to be taken into account including company specific risks and equity risk along with risk free rates. Negative government discount rates do not necessarily imply that risk has decreased and the accompanying potential for asset deflation would significantly impact market participants required rates of return.

29. If fair value is determined using known and knowable information at March 31, 2020, what do we do if the markets rebound or decline further in April or May 2020?

Fair value is based on what is known and knowable as of the measurement date. ASC Topic 820 and IFRS 13 require the application of informed judgement. March 31, 2020 will require significant effort in applying and documenting the judgments used. A potential rebound after March 31, 2020 would impact fair value at subsequent measurement dates but cannot be known or knowable at March 31, 2020.

30. Will applying a market-based discount representing macro market risks across a portfolio of private debt and equity investments to capture current market conditions be a reasonable approach under ASC 820 and at what disaggregated level is such analysis performed (industry, geography, sector, sub-sector, etc.)?

Fair value is determined at the "unit of account" level, i.e. the level of aggregation used to report the investment. Therefore, generally it would not be appropriate to apply a macro adjustment to individual investments. However, a macro adjustment factor applied to individual homogeneous investments, such as loans with substantially similar credit characteristics, terms and yields may be appropriate depending on the facts and circumstances.

Further the fair value of a debt investment is generally valued separately and distinctly from the fair value of an equity investment in the same underlying portfolio company.

LP Interests

31. If one holds LP positions in a fund (which holds non-traded or infrequently traded debt or equity underlying investments) what approaches, if any, might be used for adjusting the latest available capital statement (Net Asset Value (NAV) as of September 30 or December 31, 2019) in order to conclude on fair value for the fund interest at March 31, 2020.

Institutional investors in fund interests generally have the requirement to estimate the fair value of their investments, including fund interests, at each measurement date. US Generally Accepted Accounting Principles (US GAAP) provide guidance when estimating the fair value of a limited partnership or fund interest (IFRS does not provide guidance, but generally Net Asset Value (NAV) is used as a starting point similar to US GAAP).

Many Limited Partners (LPs) use the “practical” expedient to estimate the fair value of a fund interest. The practical expedient allows the use of reported NAV as the LPs fair value estimate when the following conditions are met:

1. the limited partnership interest is in a fund which reports under ASC Topic 946 (or equivalent) and values all investments in accordance with ASC Topic 820 (fair value),
2. the LP has taken steps to validate that reported NAV is based on the fair value of underlying investments;
3. reported NAV is as of the same measurement date (unless the difference from the last reported measurement date is not significant)
4. the fund interest has not been designated for sale.

If the fair value validated NAV is not as of the same measurement date (which will generally be the case, as it takes GPs 45-120 days to report at quarter end/year end) and the difference is significant (which likely will be the case at March 31, 2020), then the investor in the limited partnership interest can still use last reported NAV as the starting point for estimating fair value. At March 31, 2020 the last reported NAV (September 30 or December 31 2019) would be adjusted for:

1. cash movements (capital calls and distributions),
2. actively traded holdings; adjusted to the March 31, 2020 closing price
3. realized gains/losses,
4. other significant impacts on NAV, and
5. fair value movements of underlying investments.

In most cases, there will be no reliably correlated index which can be used to determine the expected fair value movement of underlying non-traded or infrequently traded investments. This is because each individual underlying portfolio company investment is in specific private company debt or equity with unique company specific, industry, size, geographical, strategy, and lifecycle characteristics.

What can be done is one or more of the following:

1. Create a tailored proxy index on a fund by fund basis which attempts to mirror the specific investments in the fund.
2. Speak with the fund manager to understand the magnitude of the fair value change for the fund and use this information to drive the judgment as to the fair value change.
3. Apply a judgmental macro adjustment based on the general nature of the underlying investments (such an approach would be less precise) using public market indices as a reference point.

Care should be taken to apply a reasonable adjustment given that the public markets have a tendency to move more quickly and steeply in down and up markets than do the private markets—hence using the public markets as a proxy without adjustment will generally over or understate value.

32. Is there any consensus on whether firms intend to keep their December 31, 2019 portfolio marks and reflect the valuation impact at June 30, 2020?

As noted above, the practical expedient only applies if NAV is fair value based and as of the same measurement date (unless the difference is not significant). As the fair value change from December 31, 2019 to March 31, 2020 is likely to be significant, any LP conclusions at March 31, 2020 which have not taken into account such movements in value would not be congruent with relevant US GAAP, IFRS or Government (GASB) Accounting Standards.

33. How should LPs think about valuing co-investments or direct investments?

Investments in private debt and equity securities (including co-investments) need to be measured at fair value each time information is reported to stakeholders, beneficiaries or investors (generally quarterly or monthly). The rigor required to value a co-investment or direct investment made by an LP is the same rigor as that required of a fund manager. The wider questions in this document describe questions concerning estimating the fair value of direct/co investments.

Debt

34. What is the impact of the current market and economic environment on private debt investments?

In general, we have observed that no asset class is immune to the current market sell-off and associated volatility. Intuitively, private debt should be well positioned to weather the storm. Nonetheless, challenging economic conditions appear not to have spared debt issuers. Based on our discussions with market participants, there are numerous indications that market risk tolerance has increased, even in the private debt markets.

35. How do you quantify the impact of current market conditions on private debt investments when they are considered a long term non liquid asset?

For investments in non-traded or infrequently traded debt investments estimating fair value is focused on the debt instrument as a unit of account (as opposed to the valuation of the company or issuer). Specifically, the ASC 820 / IFRS 13 Fair Value definition requires consideration as to what a market participant would pay for the debt instrument in a hypothetical sale as of the valuation date, **irrespective** of whether the investor intends to hold the instrument till maturity or prepay.

Enterprise value is a significant input into the valuation of the debt instrument as it provides a basis for evaluating the repayment risk. However, just because an instrument has sufficient enterprise value coverage does not mean that it should be valued at par or its face amount. Moreover, a decrease in the enterprise value (as will likely be common in the current economic environment) is an indication of elevated credit risk.

The fair value of non-traded debt investments is generally estimated using a market-based yield to discount the contractual cash flows of the debt instrument to present value. In some circumstances, most likely cash flows are discounted at an appropriate discount rate to estimate fair value. In the current market environment, indications are that market participants deem credit risk to be elevated, and market spreads have expanded. The change in enterprise value will inform the change in credit risk, while available indices will inform as to expansion in credit spreads and thereby the increase in expected market participant yields.

36. How do you mitigate the volatility from the secondary high yield bonds market?

A key principle of the valuation exercise is to reflect market reality as much as possible. Volatility is one measure of “real world” market conditions. Volatility can be observed easily in the public markets. In private markets, volatility is unobservable – but that doesn’t mean volatility doesn’t exist. Having said that, there is good reason to believe that private markets are less volatile than public markets. Private markets are isolated from large capital market inflows and outflows, and the daily portfolio re-balancing that is a feature of the public markets. Therefore, caution should be exercised when benchmarking private assets. A 1:1 calibration of a private loan instrument to a public leveraged loan index or bond index

might capture excess volatility that is unique to the public market. Therefore, steps should be taken to ascertain the degree to which the private markets are correlated to the public markets.

Energy

37. How should we be thinking about oil prices and their impact?

Macro Environment

The price of oil has decreased more than 60% over the past two months. Prior to the COVID-19 pandemic, the oil market was in a state of oversupply. The coronavirus has further complicated the economics by significantly impacting the demand for hydrocarbons, as China represents the single largest oil importer in the world. Some experts estimate the demand decrease to be 3-5 million b/day, or more. Couple this material reduction in demand with a historic supply-side shock driven by the collapse of negotiations between Saudi Arabia and Russia and their inability to agree to continued limits on production, and we have a bit of a perfect storm for material commodity price declines.

What is behind the supply-shock? Russia feels threatened by an abundance of U.S. shale production that is competing with traditional Russian supply in key Asian and European markets. With some of the world's lowest production costs, flexible tax system and free-floating Ruble, Russia can continue pumping relatively economically at current oil prices. The opposite is true for Saudi Arabia, who has higher breakeven costs, but who has proven resilient in the past. Saudi Arabia has an enormous balance sheet to fall back on and have re-emphasized their commitment to grow production meaningfully.

What does this mean for North American producers? As marginal cost producers with steeper decline curves, U.S. shale appears most vulnerable in this price war. Keep an eye out for upcoming spring redetermination period to see how lenders react.

What's the impact of recession or prolonged downturn? Price collapse sustained below \$40 per barrel could trigger deep industry restructuring and tremendous cost-cutting. Current prices are well below break-even for most US shale producers. We're seeing significant product entering storage facilities - tanks and tankers. The more volumes that flow into storage, the longer the depressed pricing will persist. The amount of storage will play a meaningful role in the duration of this downturn.

We are also starting to see some disruptions of the supply chain for many development or construction assets (think renewable power and some infrastructure sectors) who rely on materials from areas impacted from the COVID-19 pandemic (for example LAX's automated people mover submission of a relief event notice after receiving notification of force majeure, and Original Equipment Manufacturers issuing force-majeure notices to project sponsors). We're also seeing postponements or cancellations of announced transactions.

Valuation

In the energy sector, the Discounted Cash Flow approach is widely recognized as a key methodology utilized in valuation. Obviously, one material input in the DCF is the commodity price forecast. The liquid portion of the forward curve can be considered a Level I valuation input, and while some internal management curves may not always align exactly with the forward market; any material deviation may trigger red flags within valuation, audit and regulatory reviews. We suggest reflecting the realities of the forward curve through a liquid point in time, then reverting to a fundamental view thereafter. Many short and medium-term forecasts have been revised by the EIA, Wood Mackenzie, IHS, and analyst consensus estimates. Valuations should follow suit.

Now, how one weights the DCF alongside other techniques (market trading, transaction, cost, calibration) requires careful consideration on a case-by-case basis. The most reliable data should be used to inform the valuation.

Lessons from prior downturns in the energy markets indicate that hedge books, leverage and upcoming debt maturities are key drivers of successes/failures. Despite high leverage across the energy industry as a whole, most large and medium E&P's have relatively strong liquidity and balance sheets relative to the 2015 and 2016 downturn. However, many still struggle to attract lenders, even with "cleaned-up" balance sheets. Many shale companies face insolvency at current market prices. There have been dozens of energy companies announcing cost cutting initiatives (30% or more) as well as reductions in dividends and furloughs. The ability of a company to operate within its own cash flows will be critical.

Sub-sector impacts

OFS companies are often the first to suffer in commodity price market like we're seeing currently. As producers reduce cost and curtail production, OFS companies become vulnerable. The renewable sector has seen Original Equipment Manufacturers issue force-majeure notices to project sponsors due to supply chain disruptions in Asia and reductions in electricity demand. Infrastructure, a sector known historically for stable cash flows and long term defensive investments (earned a reputation as a safe haven) is starting to get tested.

1. Midstream - volumes may be down due to declining production. How strong are contracts with producers?
2. Airports, ports, toll roads, managed lanes - generally stressed due to decreased passenger travel and associated airline stress.
3. Economically regulated assets may be mostly sheltered
4. Contracted assets need to look hard at counterparty creditworthiness and the strength of underlying contracts

Summary

There are a significant number of moving parts that need to be carefully and thoughtfully contemplated as Q1 valuations are being prepared. Very few of which will likely indicate anything other than declines in carrying values for most of the energy sector. The magnitude of valuation impacts will likely be differently by sub-sector, geography and on an individual investment case-by-case basis. The duration of these compounding supply and demand shocks will prove to be critical.

Real Estate

38. Would you expect the value of Real Estate to change?

We expect that in the short-term real estate values will drop in the property types most affected by COVID-19. These are in the hospitality & leisure, transportation, retail (certain types that are not deemed essential businesses), student-housing and seniors housing property types that are most affected immediately by lack of foot traffic, store closure and lack of bookings.

Other property types such as multifamily, industrial and office will be affected as well however it is unclear at this point as to the extent of this effect due to lack of data. These properties are going to be affected by the large change in the economy and the potential for a dramatic spike in unemployment. Some property types will see less of an effect and potentially hold their values such as essential retail (grocery stores, pharmacies, quick service restaurants, convenience stores and hardware/home improvement stores) as well as warehouse distribution properties.

39. How long a period would you consider to be 'sustained'?

This is unclear at this point but any prolonged period more than a month or two will have a negative effect on real estate values for the properties that are most affected.

40. How do we adjust cap rates and discount rates if there are no new sales comparable data?

In the absence of data that can be extracted from market sales, the best indication of cap rates and discount rates will be through surveying market participants as to what they believe these indicators are and to review information from the public REIT market by sector of whom pricing is exhibited daily on the major exchanges. We do believe that while this public data is one indicator of what real estate will be likely affected, however, the magnitude of the decline in market

multiples are also reflective of the broader market and current panic selling of stocks which we believe are not directly correlated to real estate values.

Similarities to 2008/9

41. Any observations from the 2008 financial crisis and how private equity valuations changed that are 'lessons learned' for today? Did it take private equity managers a while to reflect valuation changes as more information became available or did values drop off pretty quickly?

The current crisis is unique in modern times. Travel restrictions, economic activity restrictions (restaurants, hospitality, entertainment, leisure, retail, etc.), physical distancing, sheltering in place, etc. all in an effort to slow the progression of COVID-19 is unprecedented given our interconnected global economy.

Overall, private market valuations were not very quick to react to the conditions presented in the public market during the 2008/9 crisis. Today, the parties involved in the valuation process are more informed, have more experience and are better equipped to appropriately estimate fair value in the current environment than in the 2008 financial crisis.

In addition, investors (LPs) are acutely aware that they need to report all assets on a common basis, that being fair value. If their private investments are not valued consistently using the fair value framework, their overall asset allocation models will not function properly and misallocations or decisions to buy or sell assets in various classes may be flawed.



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