Duff & Phelps

Impact of COVID-19 on Goodwill Impairment
An Asian Perspective

Agenda

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Ricky Lee is a managing director in the Valuation Advisory Services of Duff & Phelps based in Hong Kong and has provided independent valuation services on business enterprises, intangible assets, portfolio investments and financial instruments in Greater China and Asia for more than 20 years. He is a current member of the Financial Reporting Valuation Panel which acts in an advisory capacity to the Financial Reporting Standards Committee ("FRSC") of the Hong Kong Institute of Certified Public Accountants ("HKICPA") on financial reporting related valuation and present Secretary (and former President) of the American Society of Appraisers Hong Kong Chapter.

Ricky performs valuations for tax filing and in compliance with impairment test, purchase price allocation, share based compensation, mark to market derivatives, mezzanine instrument bifurcation under IFRS and US financial accounting for private equity funds, Chinese and multinational companies. In addition, Ricky provides pricing advisory services for the purposes of joint ventures, litigation, M&A and public listing.

He have served major clients including Alibaba, Tencent, Baidu, CK Hutchison Group, New World Group, PCCW/HKT, Shui On Group, APT Satellite, Galaxy Entertainment, Esprit Holdings, COSCO Shipping Group, China Cinda, China Huarong, China Travel, China Everbright, Zhejiang Expressway, PLDT, HP 3Com, Ball Corporations, Cadbury, Eaton, Morgan Stanley, UPS, etc.

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Santosh is an external advisor and assists the Valuation Advisory Services practice of Duff & Phelps in India. He is responsible for overseeing key engagements, relationships and strategic initiatives for the Indian operations.

Santosh has more than 15 years of experience in valuation and financial advisory services. In the last 15 years, Santosh has managed and has provided a range of financial advisory services including Due Diligence, Valuation, IFRS & USGAAP assignments, Business Plan Review, M&A, Internal Audit, Accounting Assistance and Risk Advisory services.

Santosh has managed and executed a range of financial advisory engagements for Agriculture industry, Automobile, Consumer Durables, e-Commerce, Hospitality & leisure, Infrastructure, IT & ITeS, Logistics, Manufacturing, Media, Natural Resources, Petro-chemicals, Pharma & Healthcare, Power, Refineries, Real estate, Telecom & Textiles. He has provided financial advisory to clients for purposes such as financing, project finance, mergers & acquisitions, negotiations, settlement of disputes, strategic assessment, accounting and tax reporting etc.

He was heading the Financial Instrument Valuation practice in American Appraisal (AA) India earlier and used to chair the Complex Financial Instruments Valuation committee in AA, a global initiative taken by the firm to grow this particular service line. He was South India Valuation leader in Deloitte and was part of the founding team in Grant Thornton Bangalore.

He has been a speaker at several seminars/ workshops, including those organized by the Institute of Chartered Accountants of India (ICAI). He was an International Key Note speaker in a conference on Business Valuation organized by RICS in London. Santosh's prior work experience includes stints with Grant Thornton and Deloitte.

Santosh is a qualified Chartered Accountant from the Institute of Chartered Accountants of India. He is also a Partner in D & P Advisory LLP.

Carla Nunes

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Carla Nunes is a managing director in the Office of Professional Practice, where she provides firm-wide technical guidance on a variety of valuation, financial reporting and tax issues. She is also the Global Leader of Duff & Phelps' Valuation Digital Solutions group, which produces cost of capital thought leadership content and data housed in the Cost of Capital Navigator.

In 2011, Carla completed a one-year rotation in Duff & Phelps' London office, where she promoted the firm's IFRS education efforts and marketing initiatives, as well dealing with IFRS implementation issues.

Prior to these roles, Carla was part of the Valuation Advisory Services practice, focusing on the valuation needs of primarily consumer and industrial product companies at Duff & Phelps and its predecessor firms, PricewaterhouseCoopers and Standard & Poor's. She has 23 years of experience providing a variety of valuation, financial reporting, and tax services.

Carla has conducted numerous business and asset valuations for a variety of purposes, including purchase price allocations, goodwill impairment testing, mergers and acquisitions, corporate tax restructuring and debt analysis. She has been involved in multiple valuation assignments for a wide range of industries, including pharmaceutical, biotechnology, healthcare, vitamin retail, specialty chemicals, industrial manufacturing and gaming and hospitality. Carla has substantial experience working with multinational companies, having addressed complex tax, international cost of capital and foreign exchange issues.

She is also one of Duff & Phelps' experts in addressing valuation issues related to cost of capital. She authored a chapter titled "Cost of Capital for Divisions and Reporting Units" included in the 4th and 5th editions of the textbook Cost of Capital: Applications and Examples (2014), by Shannon Pratt and Roger Grabowski. She was a contributing author to the chapter "Risk-free Rate" in the 5th edition. She is also a co-author of the Duff & Phelps Valuation Handbook series, now available exclusively online in the Cost of Capital Navigator.

Carla received her M.B.A. in finance from the University of Rochester's Simon School, completed coursework for a Masters of Taxation from Villanova University School of Law and received an honors degree in business administration from the University of Lisbon's School of Economics and Management (ISEG Lisbon). She also holds a Chartered Financial Analyst (CFA) designation and is a member of the CFA Institute, the CFA Society of Philadelphia, and the AICPA. Carla has passed the exam and fulfilled all the requirements for the Certified in Entity and Intangibles Valuations (CEIV) credential. Carla is a native Portuguese speaker.

Ashish McLaren

Director, Valuation Advisory Services

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Ashish is a Director in the Valuation Advisory Services practice of Duff & Phelps in Singapore. He provides advisory services to his clients with regards their mergers and acquisitions (M&A) transactions, purchase price allocation (PPA) exercises, portfolio valuation, asset impairment reviews and other financial reporting valuations.

Prior to joining Duff & Phelps in November 2015, Ashish was with PricewaterhouseCoopers Singapore for 8 and ½ years in their valuation practice and has advised leading corporates as well as private equity players in the M&A and reporting requirements. Previously, he had experience in India working with leading corporates – Escotel Mobile (now Idea Cellular) and Bharti Airtel – as well as with financial advisors – Lazard and Deloitte.

Ashish has worked on deals across borders as well as across varies industries including telecom, precision manufacturing, consumer & retail, food & beverage, healthcare, power generation and infrastructure. He has advised several companies in their M&A, IP valuation and financial reporting valuation requirements. He has also advised various private equity players in their M&A, financial reporting as well as portfolio valuation requirements.

Ashish is a registered Chartered Valuer & Appraiser (CVA) with IVAS. He is also an Honors graduate in Physics from St. Stephen’s College, Delhi University, India and received his Post Graduate Diploma in Management (MBA) from Amity Business School, NOIDA, India.

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1. Duff & Phelps Firm Overview

Duff & Phelps Services
Enhancing Value Across a Range of Expertise

VALUATION ADVISORY

Valuation and consulting for financial reporting, tax, investment and risk management purposes

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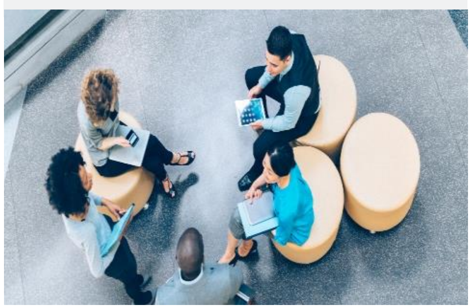

CORPORATE FINANCE

Objective guidance to management teams and stakeholders throughout restructuring, financing and M&A transactions, including independent fairness and solvency opinions

- M&A Advisory
- Fairness and Solvency Opinions
- Transaction Advisory Services
- ESOP and ERISA Advisory
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- Private Capital Markets and Debt Advisory
- Financial Restructuring

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- Business Intelligence and Investigations
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- Security Risk Management
- Compliance Risk and Diligence
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Notice Media Solutions
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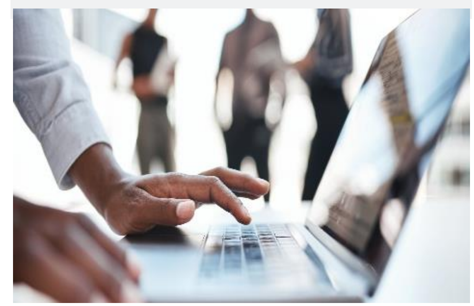


Professional Affiliations

Duff & Phelps Managing Directors provide input to regulators and standard-setters, and actively contribute to the development of valuation industry best practices.

2. Introduction: COVID-19 Economic Impact on Goodwill Impairment Testing

COVID-19 Economic Environment Impact on Goodwill Impairment Testing

- The **COVID-19** pandemic has caused **unprecedented turmoil** in the global economy and financial markets, the breadth and duration of which remains unknown.
- The outbreak has contributed to **market volatility** causing substantial declines in market capitalization, one of many factors for consideration as to whether a triggering event for an impairment test has occurred.
- Company **projections may be affected** by disruptions in its supply chain, a shift in demand for its products or services, or the loss of customers.
- While some industries and companies may be more vulnerable than others, both the effects of a pandemic and aggressive COVID-19 containment measures have affected social and economic behavior, increasing overall **uncertainty.**
- In the aggregate, these factors can result in a negative impact on the outlook and valuation of businesses, and the **recoverability** of any associated **goodwill** and other assets.

How the Covid-19 Pandemic Affects Company Projections

- Enterprise Value Considerations
  - Revenue
    - Impact on customer demand
    - Timing
    - Customer financial health
  - Supply Chain
    - Timing and availability of goods
    - Cost of goods
    - Supplier financial health
  - Operations
    - Employee availability
    - Employee productivity
    - Ability to work remotely and maintain appropriate cybersecurity
- EBITDA or other metrics in arrears need to be updated in real time when benchmarking with comparable companies
- Current liquidity needs—Can the company survive? Debt Covenants? Working capital refresh needs?
- Future cash flow projections need to be updated to consider short-term, medium-term and long-term expected impacts
- Consideration of the impact of a potential recession (short and long-term impact)

Polling Question 1

Choose one!

What industry does your company represent?

- ❑ Transportation / Hospitality / Leisure
- ❑ Retail / Consumer Products
- ❑ Energy / Mining
- ❑ Real Estate
- ❑ Financial Services
- ❑ Technology
- ❑ Telecom
- ❑ Media
- ❑ Pharmaceuticals / Healthcare
- ❑ Other

Polling Question 1 – Answer

Choose one!

What industry does your company represent?

- ❑ Transportation / Hospitality / Leisure
- ❑ Retail / Consumer Products
- ❑ Energy / Mining
- ❑ Real Estate
- ❑ Financial Services
- ❑ Technology
- ❑ Telecom
- ❑ Media
- ❑ Pharmaceuticals / Healthcare
- ❑ Other

3. IFRS Overview on Goodwill Impairment Testing

Goodwill Impairment Testing

IAS 36 Overview

Key concepts:

- Goodwill acquired is allocated to those Cash generating units (CGU) that are expected to benefit from the synergies of the combination
- No amortization
- Tested annually for impairment, or more frequently if there is an indicator of impairment
- Impairment losses first allocated to goodwill and then other assets in CGU
- Unlike long-lived assets, impairment losses are never reversed for goodwill
- Goodwill is tested for impairment by comparing the recoverable amount of a CGU of a group of CGUs to its carrying amount

Concept of Impairment Test under IAS 36

Impairment exists if… → **CGU / Asset carrying amount** > **CGU / Asset recoverable amount**

Recoverable amount is the greater of...

Value in use

- Present value of the future cash flows expected to be derived from an asset or CGU
- Income approach only
- Reflecting in the internal perspective of company
- True synergy effect between CGUs (even buyer specific) but no future restructuring if not approved by the board
- Discount rate on a pre-tax basis (can be derived from post-tax discount rate through iterative process)

Fair value less costs of disposal

- The price that would be received from the sale of an asset or CGU, less costs of disposal
- Both income and market approaches
- Reflecting the external perspective of market in which the company is operating
- Assessment of asset / CGU from perspective of a market participant
- Discount rate based on how market participants price risk (typically on an after-tax basis)

4. Impairment Indicators

Goodwill Impairment

Triggering Events That May Be COVID-19 Related

Indicators	Relevant to COVID-19?
Macroeconomic conditions	Yes
Industry and market considerations	Possibly
Cost factors	Possibly
Overall financial performance	Possibly
Other relevant entity-specific events	Possibly
Events affecting a CGU	Possibly
A sustained decrease in share price	Possibly

5. Market Prices in Current Environment

Using Stock Prices in Goodwill Impairment Testing

Are stock prices representative of fair value in the aftermath of COVID-19?

- Market prices may not be representative of fair value in an inactive market or in a forced transaction (for example, a forced liquidation or distress sale).
- **Current market conditions are volatile but the observed transactions are orderly transactions occurring in an active market:**
  - In an active market, transactions for the asset take place with sufficient frequency and volume to provide pricing information on an ongoing basis.
  - An orderly transaction 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.
- Prices from orderly transactions cannot be ignored and the company's stock price should be considered (given some weight) in the analysis, despite the stress experienced by the markets.
  - As a result, both the market approach (market prices and multiples) and a market capitalization reconciliation of the overall valuation conclusion should be evaluated *with appropriate consideration of recent price trends (not necessarily as of a specific date) and with appropriate sensitivities.*
- Fair value is 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.
  - Note: the asset in this case is the CGU, which is a different unit of account from an individual share.

What Does Fair Value Mean in Times of Market Dislocation?

1. Fair value ≠ fire sale price

2. Fair value:

   - Takes into account current market conditions.
   - Reflects a market participant view.
   - Incorporates information that is known or knowable as of the measurement date.

3. Accounting standards require that observable prices for the same asset be given appropriate weight when estimating fair value. What weight? Balance the following, as appropriate, in the current environment:

   - The COVID-19 initial market reactions **may be** based on a disproportionate weighting of downside scenarios relative to a more refined company insight into the long-term expected economic impact of the pandemic. This may be an indication of asymmetric information.
   - A consistent decline in market capitalization across an industry cannot be disregarded as it may be indicative of the value of the company in the current crisis.

What is Known and Knowable at March 31, 2020?

Known and Knowable

- **Public market prices** have decreased significantly
- **Energy prices**, in particular the price of oil, have decreased drastically
- **Selected industries** have been considerably impacted by the response to the pandemic
- Many companies are facing a **liquidity crunch** impacting cash resources
- **Uncertainty and risk** have increased, and therefore a market participant required rate of return has likely increased
- Central banks and governments are implementing **monetary and fiscal stimuli**
- The potential for a prolonged **economic downturn** is increasing

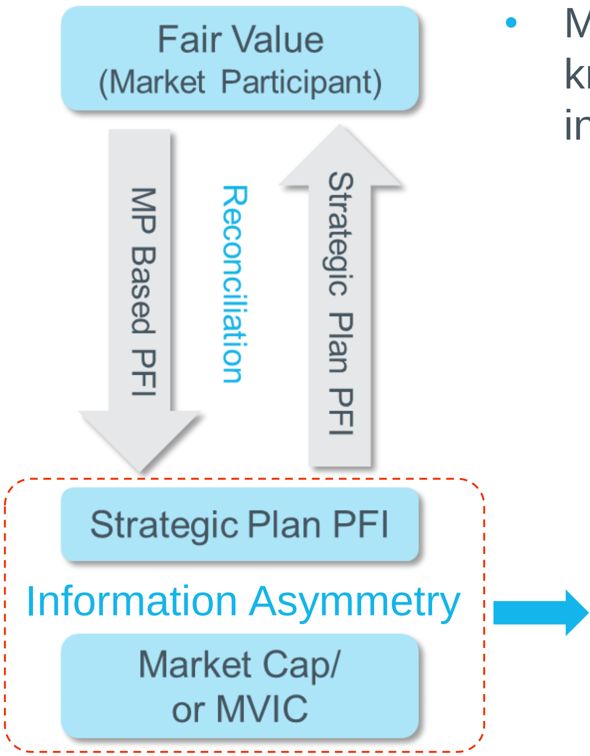
NOT Known and Knowable

- When **effective treatments** for COVID-19 will be **available**
- When a **vaccine** will be available to prevent the spread of COVID-19
- Whether **summer weather** will **curtail spread** of COVID-19
- Whether and when spread of **COVID-19 will return** if spread is curtailed
- How long shelter in place and travel **restrictions** will remain in effect
- **When** and by **how much** the **public markets** will increase or decrease in value
- The **full impact** of government and central bank **fiscal and monetary policy** legislation and initiatives
- The **timing, depth, and length** of any prolonged **economic downturn**

6. Information Asymmetry

Information Asymmetry

- The COVID-19 initial market reactions **may be** based on a disproportionate weighting of downside scenarios relative to more refined insight into the long-term expected economic impact of the pandemic.



- Management may have access to data or information that is not known outside the entity and is not included in the external indication of fair value (share price).
  - ✓ This data is expected to be obtainable through the usual and customary due diligence procedures.

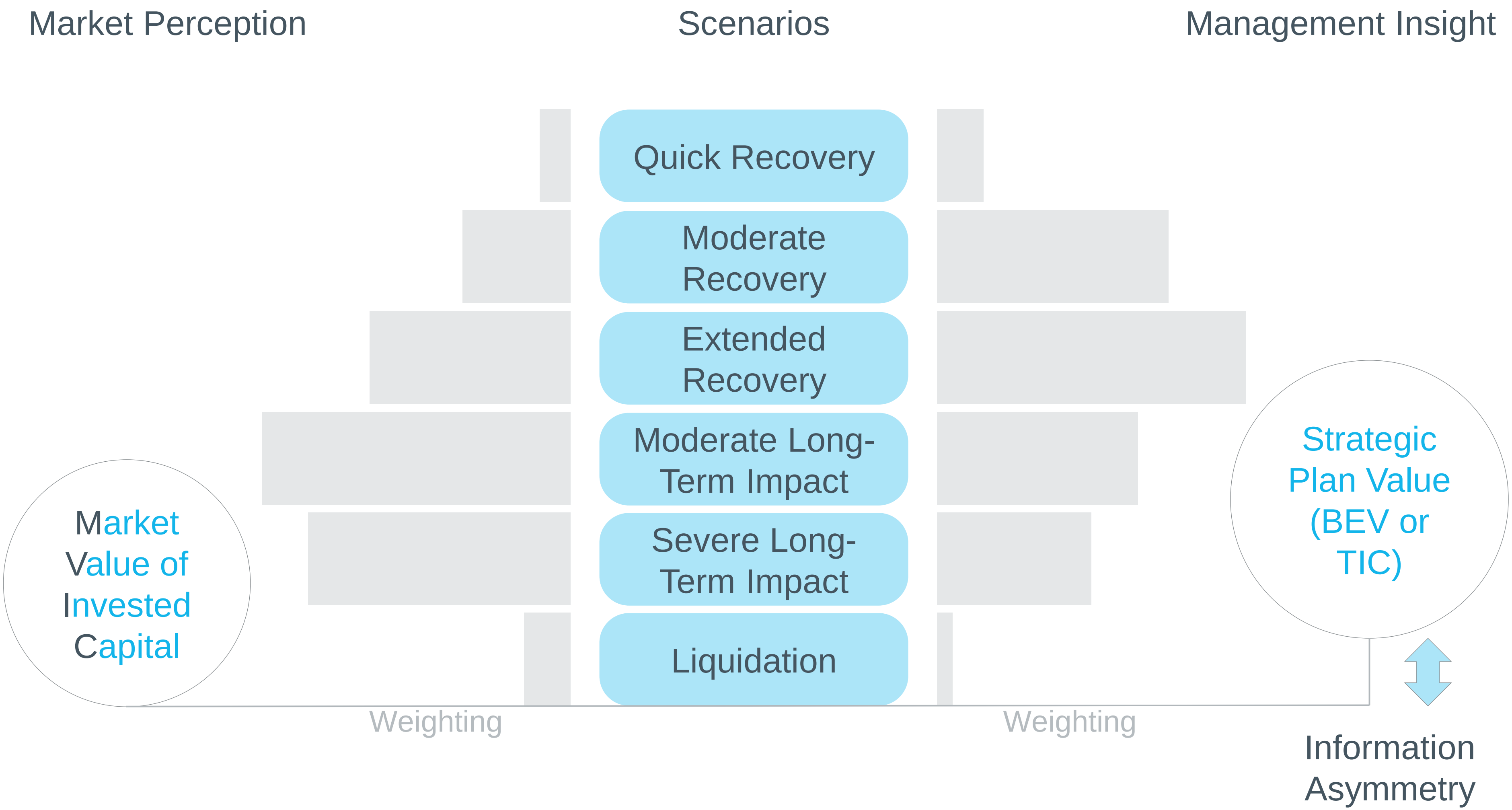
Information asymmetry is best evaluated at the *entity level* (market cap/MVIC) compared to the entity Strategic Plan (Standalone) value (which comprises the sum of the individual CGUs Strategic Plan values).

Information Asymmetry[1]

- The entity, or a controlling shareholder in the entity, may be privy to information that is not available to noncontrolling interests (e.g., public shareholders) in the subject entity. This gives rise to information asymmetry between these parties.
- Market participants conducting usual and customary due diligence in connection with the acquisition of a controlling interest in the entity are likely to identify such information.
- Therefore, such information asymmetry is resolved in the fair value measurement process and is a component of the **control premium or Market Participant Acquisition Premium (MPAP)**
- In contrast, information known to a single buyer is an entity-specific assumption which should be excluded from the fair value measurement and cannot be used to support a MPAP. This buyer would be unwilling to pay more than the value of the economic benefits available to the next most advantageously positioned buyer.

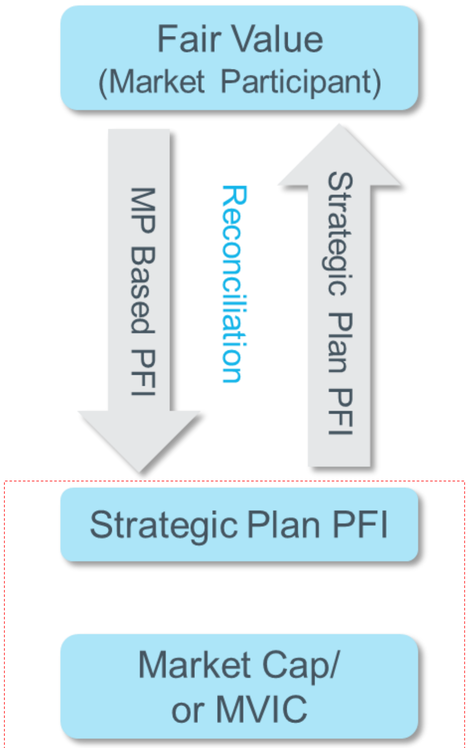
(1) Source: The Appraisal Foundation: *Valuations in Financial Reporting Valuation Advisory 3: The Measurement and Application of Market Participant Acquisition Premiums*, September 6, 2017

Supporting an Asymmetric Information Assertion



Strategic Plan (Standalone) Value vs. Market Cap/MVIC

Supporting an Asymmetric Information Assertion



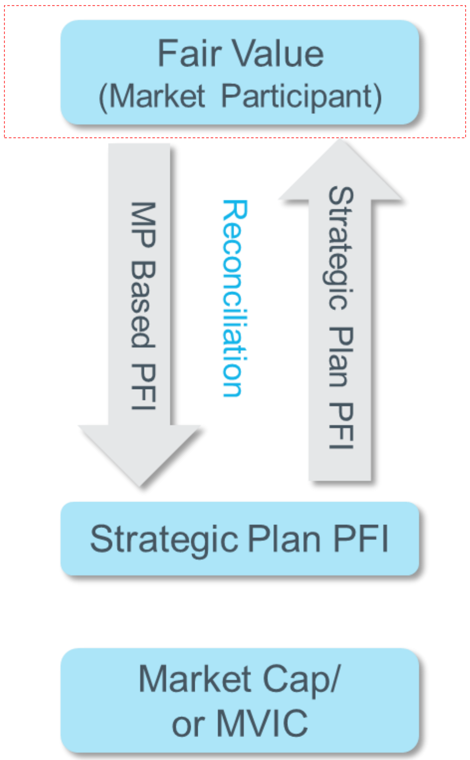
Strategic Plan (Standalone) Value / VIU

- Prerogatives of control will continue to reside with the existing controlling shareholder or group of shareholders (current stewardship of the business)
- Commonly associated with the fair value of marketable, non-controlling interests or with VIU
- Does not give consideration to discounts for lack of marketability/liquidity

Market Capitalization (or MVIC) for Public Companies

- Consider pricing trends and sensitivities in the current environment
- Market capitalization (MVIC) of publicly traded companies could equal Strategic Plan value absent information asymmetry

Fair Value = Market Participant Perspective



Fair Value (Based on MP Assumptions)

- Assumes the CGU is sold
- Includes market participant expectations regarding:
  - ✓ Enhanced revenue, margins and growth
  - ✓ Reduced risk
  - ✓ Information asymmetry revealed during the due diligence process
- Excludes company specific synergies

7. Expected Cash Flows and Scenarios

Polling Question 2

Choose one!

Has your company adjusted cash flow projections downwards / upwards to reflect the impact of COVID-19?

- ❑ Do not anticipate seeing meaningful changes to projections
- ❑ Started to evaluate the impact, but have not yet made any adjustments
- ❑ Began to make some downward adjustments
- ❑ Began to make some upward adjustments
- ❑ Other / Not Applicable

Polling Question 2 – Answer

Choose one!

Has your company adjusted cash flow projections downwards / upwards to reflect the impact of COVID-19?

- ❑ Do not anticipate seeing meaningful changes to projections
- ❑ Started to evaluate the impact, but have not yet made any adjustments
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- ❑ Began to make some upward adjustments
- ❑ Other / Not Applicable

Scenario-based Approach vs. Single Scenario Representative of Expected Value

Scenario **A** Value Indication X Probability of Scenario **A**

Scenario **B** Value Indication X Probability of Scenario **B**

Scenario **C** Value Indication X Probability of Scenario **C**

Scenario **D** Value Indication X Probability of Scenario **D**

Expected Value[2]

Measuring the economic impacts in the COVID-19 market environment is challenging and best performed by developing discrete scenarios of potential outcomes

OR

Value indication: single scenario based on a neutral and unbiased set of Prospective Financial Information (PFI)

The PFI itself is not weighted rather an expected revenue forecast is derived and the expenses and investments are correlated to revenue.

[2] May be applied to the Strategic Plan PFI (including for VIU purposes) or the Market Participant PFI (fair value).

Expected Cash Flows – Base Case

- If the company has not considered the impact of COVID-19 on PFI scenarios, we recommend starting with a “Base Case” cash flow forecast based on pre-market volatility conditions.
- Alternative scenarios would then be built off of this “Base Case.”
- Alternative scenarios become critical if the company believes market participant cash flow expectations overweight downside case scenarios.
- The “Base Case” serves as a reference scenario; however, it may be given little or no weight based on the change in economic conditions. Its purpose is to provide a framework to assess what has changed in developing various scenarios.

Assessing Scenarios

- The company should evaluate scenarios and associated probabilities considering factors such as:
  1. Customer demand, pricing and diversification
  2. Supply chain diversification and disruptions, including increased costs from the relocation of operations or a need to replace suppliers
  3. The company's industry, location, and the expected duration of the outbreak
  4. Competitors' activities
  5. Government and central bank measures
  6. Workforce disruptions
  7. Credit downgrades and covenant breaches
  8. Government and other authorities' estimates of the expected duration of the crisis
  9. GDP growth, projections and outlook
  10. Interest rate and foreign exchange rate fluctuations, and
  11. Other impacts
- Cash flow projections should consider short-term, medium-term and long-term expected impacts.

A — Scenario Value Indication

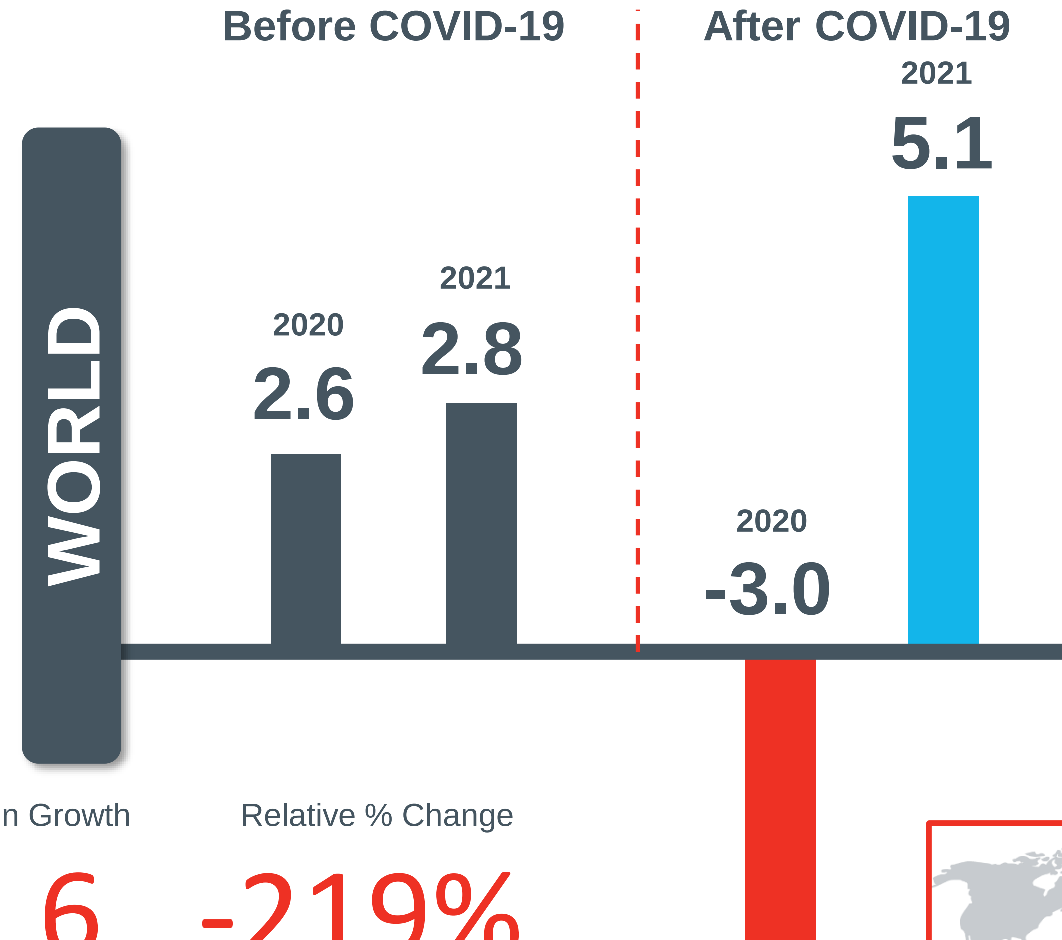
B — Scenario Value Indication

C — Scenario Value Indication

D — Scenario Value Indication

Real GDP Growth (%) Median Estimates by Region: World

Data as of May 15, 2020

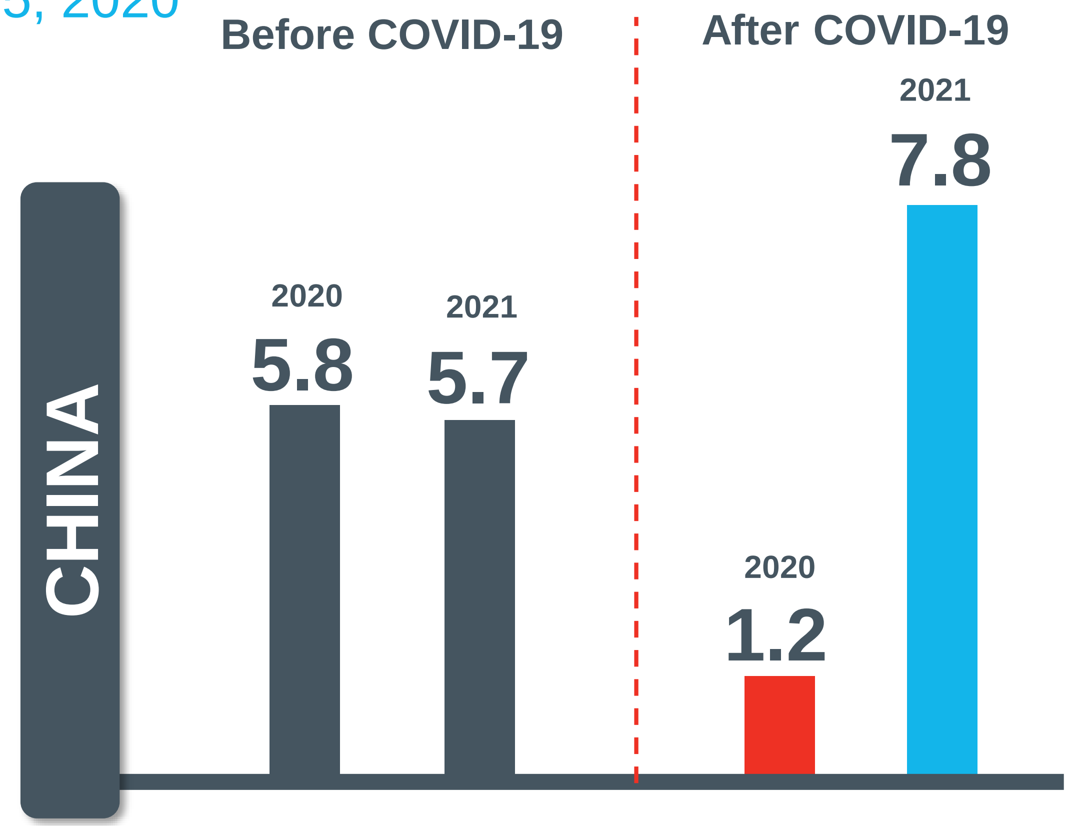


	Change in Growth	Relative % Change
2020 Median	-5.6	-219%
2021 Median	+2.3	+80%

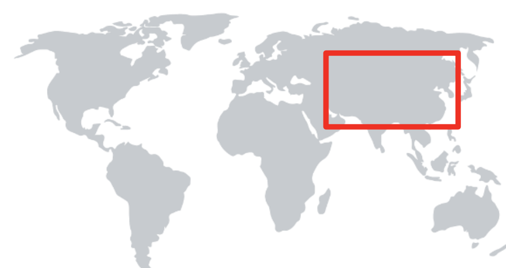
Sources: OECD, IMF, Blue Chip Economic Indicators, Consensus Economics, EIU, Fitch Ratings, IHS Markit, Moody's Analytics, Oxford Economics, S&P Global Ratings.

Real GDP Growth (%) Median Estimates by Region: China

Data as of May 15, 2020



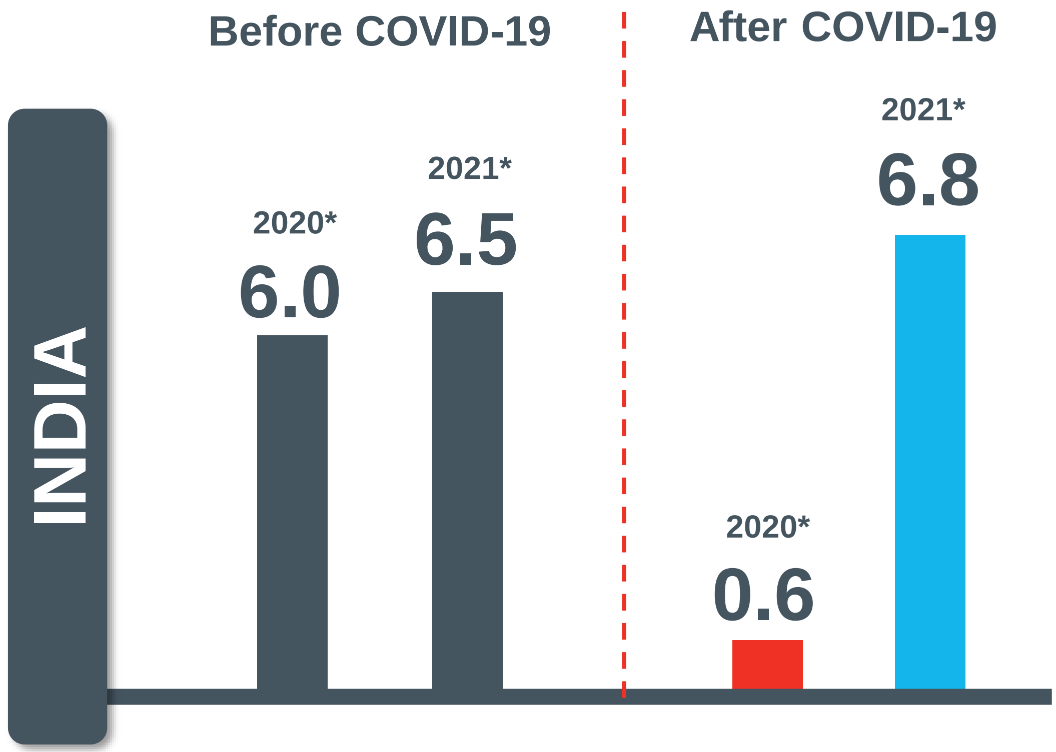
	Change in Growth	Relative % Change
2020 Median	-4.6	-80%
2021 Median	+2.1	38%



Sources: OECD, IMF, Blue Chip Economic Indicators, Consensus Economics, EIU, Fitch Ratings, IHS Markit, Moody's Analytics, Oxford Economics, S&P Global Ratings.

Real GDP Growth (%) Median Estimates by Region: India

Data as of May 15, 2020



* India forecasts based on a March 31st fiscal year end, rather than on a calendar year

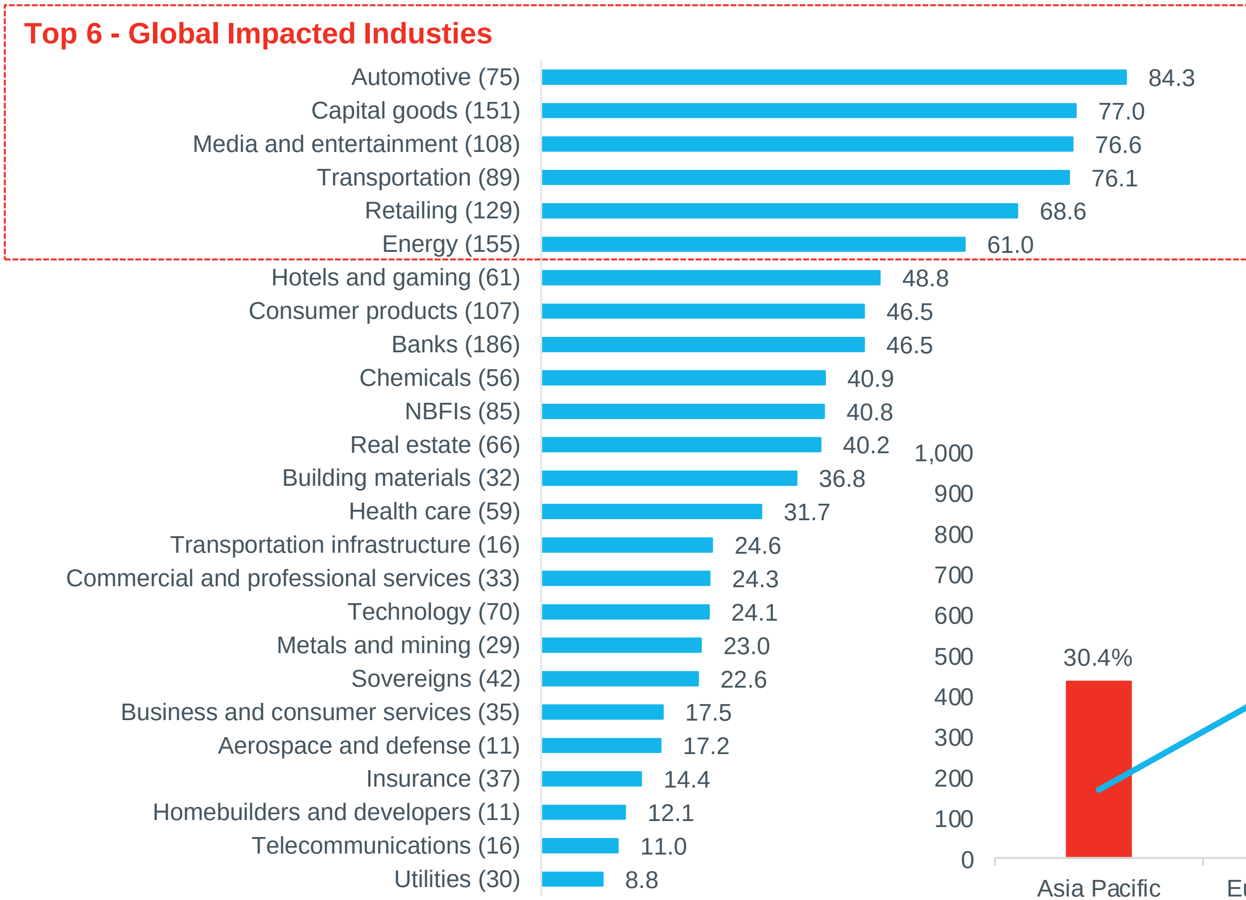
	Change in Growth	Relative % Change
2020 Median	-5.4	-90%
2021 Median	+0.3	+5%

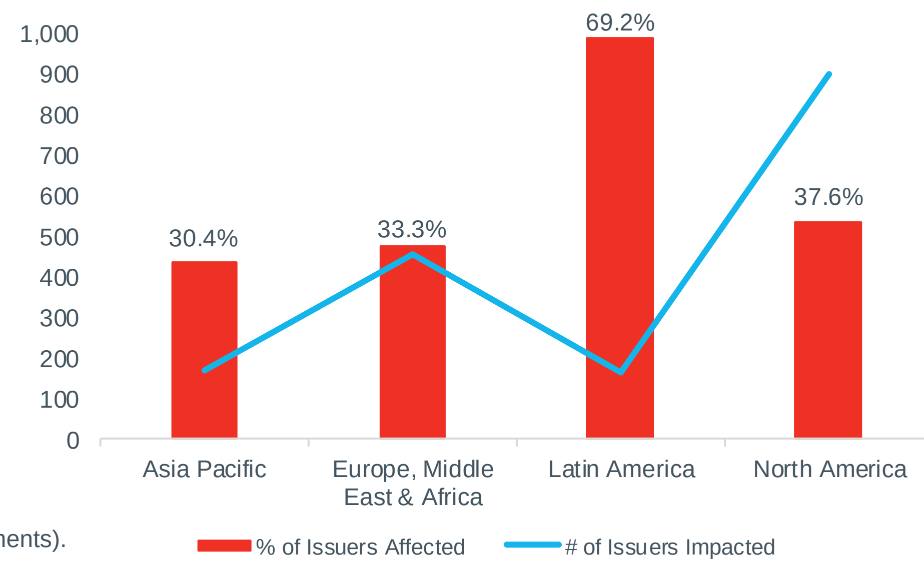
Sources: OECD, IMF, Blue Chip Economic Indicators, Consensus Economics, EIU, Fitch Ratings, IHS Markit, Moody's Analytics, Oxford Economics, S&P Global Ratings.

S&P Global Ratings

Rating Actions due to COVID-19 and Oil Price Collapse

Percent (%) of Global Issuers Affected by Industry and Region as of May 12, 2020





Note: Numbers in parentheses signify the number of rating actions by sector (including downgrades, negative outlook revisions, and negative CreditWatch placements).

* Source: S&P Global Ratings, "COVID-19: Coronavirus- And Oil Price-Related Public Rating Actions On Corporations, Sovereigns, And Project Finance To Date", May 13, 2020.

Polling Question 3

Choose one!

How long do you expect the current economic downturn to last?

- ❑ It will be over before the end of 2020
- ❑ It will be over by the end of 2021
- ❑ It will extend beyond 2021
- ❑ I have not yet assessed the impact

Polling Question 3 – ANSWER

Choose one!

How long do you expect the current economic downturn to last?

- ❑ It will be over before the end of 2020
- ❑ It will be over by the end of 2021
- ❑ It will extend beyond 2021
- ❑ I have not yet assessed the impact

GWI Testing Process Selection

Process selection depends on basis of PFI

Is the PFI prepared by the company reflective of:

- Strategic Plan (Standalone) PFI (excl. MP synergies) → “bottom up” perspective

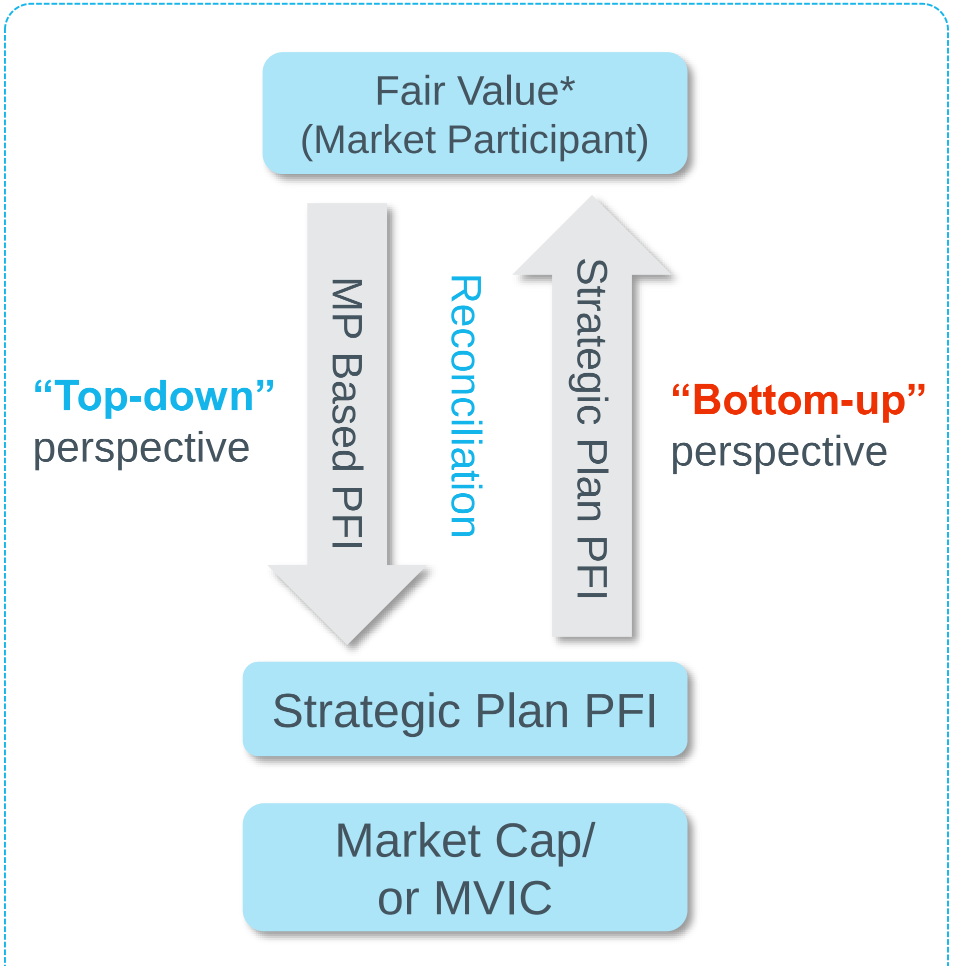
  OR

- Market Participant (MP) based PFI → “top-down” perspective

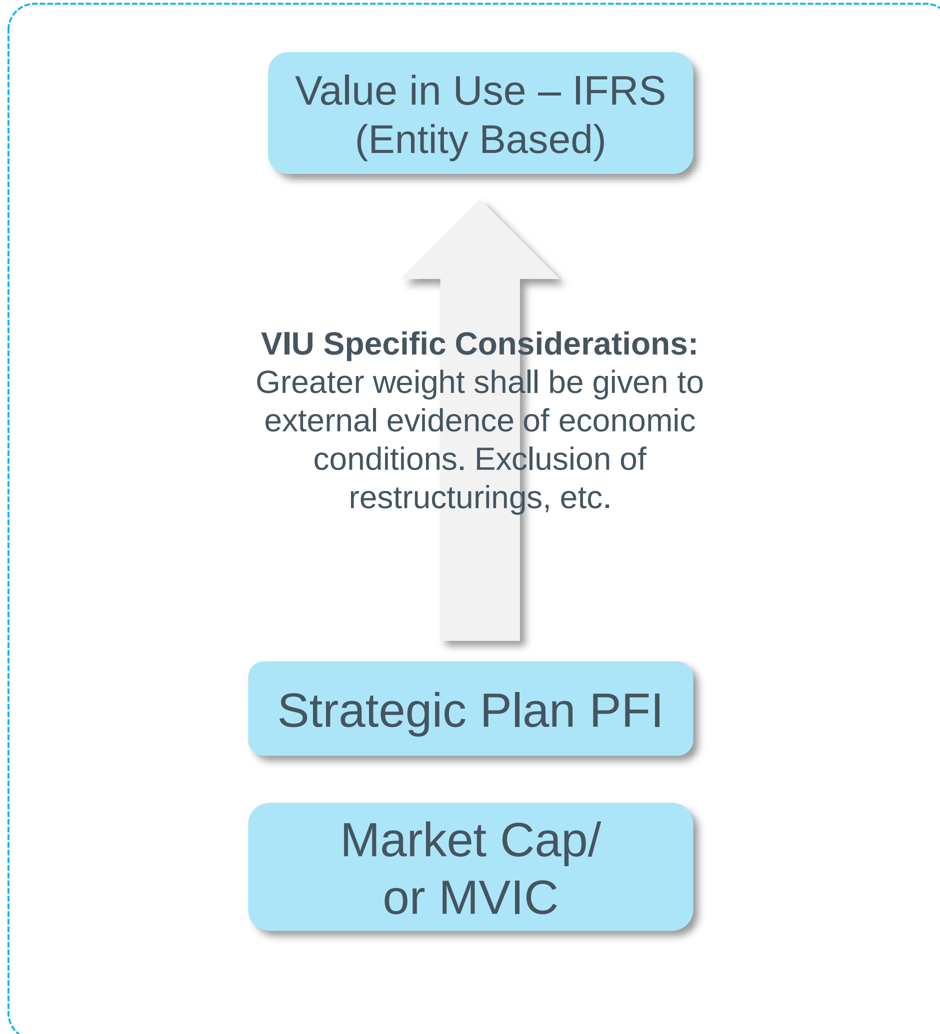
Overall objective of the process

1. To estimate recoverable amounts of the CGUs for the purpose of the GWI test
2. To explain any differences between the sum of the recoverable amounts of the CGUs and market capitalization/MVIC
3. To support any implied control premium or MPAP between 1. and 2.

GWI Testing Process Selection

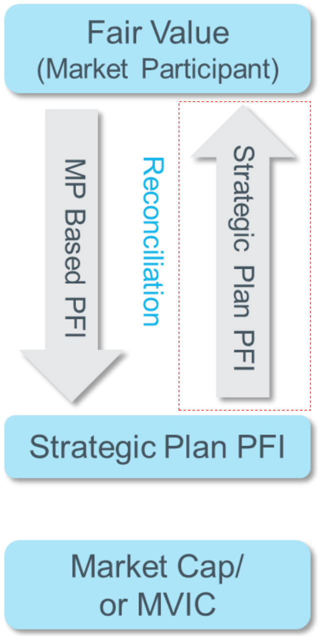


*This includes Fair Value Less Cost of Disposal (FVLCOD) under IFRS



Strategic Plan (Standalone) PFI

"Bottom Up" Perspective



- A Strategic Plan (Standalone) PFI (excluding MP synergies) is in concept more aligned with the market capitalization/MVIC or VIU (with certain considerations)
- In a "bottom up" analysis, one starts with the Strategic Plan (Standalone) PFI and builds up to Market Participant based PFI, **on a CGU (or group of CGUs) level**
- Information asymmetry has been addressed in the Strategic Plan PFI
- Further adjustments should be made to the PFI for the CGU to reflect enhanced cash flows/and or decreased risks to derive a Market Participant based PFI

PROS

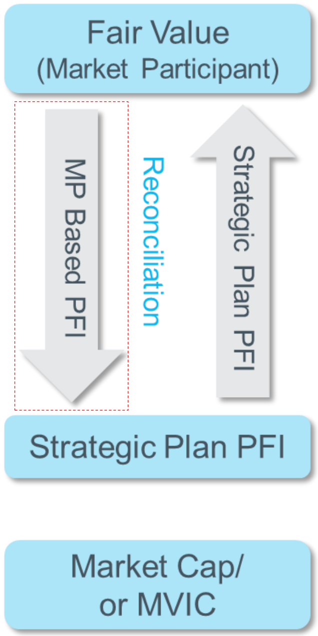
- Enhanced ability to assess **robustness of forecast**
- More direct means to support information asymmetry

CONS

- Strategic Plans on a CGU level may not be available
- Not all CGUs may be subject to impairment testing

Market Participant Based PFI

"Top Down" Perspective



- A Market Participant PFI essentially yields fair value starting point
- To quantify the premium implied by the market participant synergies included in the cash flow analysis, two DCF analyses are performed:
  1. The first is based on PFI including MP assumptions; and
  2. A second analysis excluding these MP benefits

PROS

- Direct measure of fair value

CONS

- Less transparency when asserting information asymmetry
- May require two DCF analyses

Potential Adjustments between Strategic Plan and MP-based PFI

Economic Benefits that Support for MPAP

Adjustments may include (applies to both bottom up and top down perspective):

- Superior revenue growth
- Increased operating margins
- Working capital efficiencies
- Capital expenditure efficiencies
- Lower required rate of return
- Any redundant corporate expenses
- Planned acquisition activity (which is removed)
- Nonoperating assets and liabilities
- Legal form of the hypothetical transaction [if estimating FVLCOD]
- Depreciation and amortization amounts
- Share-based compensation
- Fixed and variable costs
- Income tax rate
- Related party transactions
- Interest-bearing debt

“These adjustments may be accompanied by Increased Costs and/or Incremental Risks”

!

Enhanced cash flows giving rise to a control premium or MPAP are incremental to the PFI that reflects the ongoing operations of the business enterprise absent a change of control transaction.

8. Market Approach & Market Cap Reconciliation

Considerations in Applying the Market Approach

- In the current environment, the market approach may be more appropriately applied by considering forward rather than trailing multiples.
  - ✓ Trailing multiples (e.g. MVIC/LTM EBITDA) and earnings parameters (e.g. LTM EBITDA) may not be appropriate in the current environment as they may not be representative of current and future performance.
- MVIC should be derived with appropriate consideration of recent price trends (not necessarily as of a specific date) and with appropriate sensitivities.
  - ✓ The current crisis affects not only equities, but debt as well. Total invested capital (TIC) should also consider sensitivities, including a range from book value to fair value of debt as debt has first claim on the capital and it is possible that debtholders can get par value back.
- Forward-looking earnings parameters should be derived from analyst expectations reflecting the current market environment.
- Market multiples are applied to forward looking earnings parameters that are consistent with the expected PFI for the company.
- In theory, the market approach (using listed comparable companies) yields a **minority marketable value**. Further consideration should be given to control premiums/MPAP.
- To the extent there are comparable market transactions, the market transaction method should be applied with caution. One should understand the economics embedded in the deal price and whether it is reflective of current market conditions. In theory, this approach yields a **controlling marketable value**.

Control Premium/MPAP Considerations in the Market Approach

- An estimate of the control premium can be derived from the DCF approach and MPAP analysis performed earlier and can be applied to the market approach value indication on a minority marketable basis.
- Benchmark premiums from studies or closed transactions can still be considered, but must be carefully analyzed and cannot be exclusively relied upon.
- Applying a control premium/MPAP, where appropriate, results in a value indication on a **controlling marketable basis.**
- *The indications of the market approach and the DCF approach are weighted to arrive at the fair value of the CGU.*

In Summary

- Control premiums in the current COVID-19 environment will likely increase due to information asymmetry and will require incremental support
- Stock price and market volatility will impact the application of the market approach and market cap reconciliation
- We recommend evaluating information asymmetry discretely from the other elements of MPAP:
  1. It is more transparent to perform the information asymmetry analysis at the entity strategic plan level by comparison to market cap/MVIC, and,
  2. Utilizing a scenario-based approach provides more robust support for an assertion of asymmetric information
  3. The expected cash flow analysis weighs outcomes (value indications), not cash flows
- The nature of the PFI will determine whether a Bottom Up or Top Down perspective is used to assess the MPAP

9. Discount Rate Considerations

The Risk-free Rate (R_f) – Spot Rate or "Normalized" Rate?

During periods when risk-free rates appear to be abnormally low due to flights to quality or massive monetary policy interventions (i.e. QE or quantitative easing)

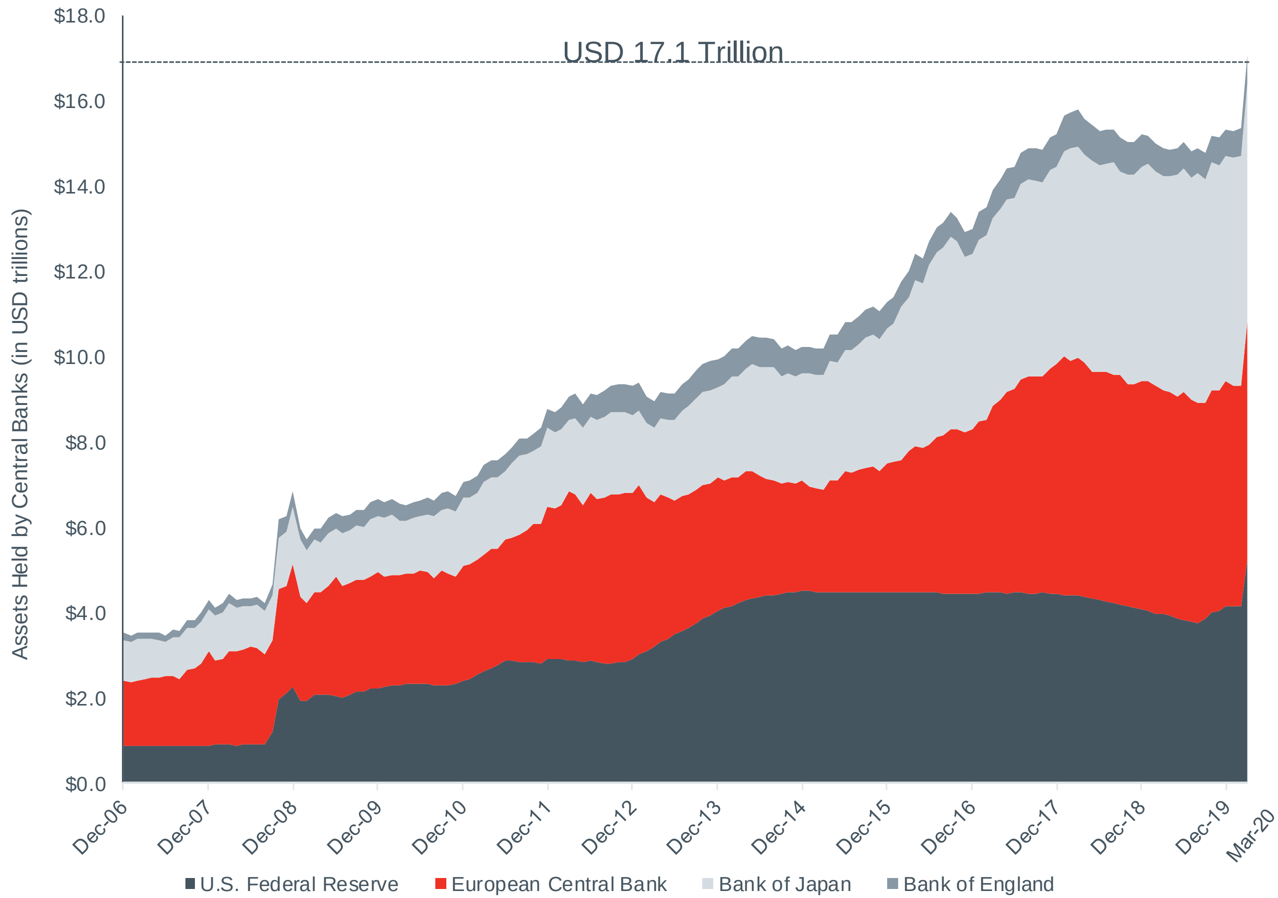
=> Duff & Phelps recommends **normalizing** the risk-free rate.

Methods of normalization include :

- Simple averaging
- Various "buildup" methods

Increase in Central Banks Balance Sheets due to QE

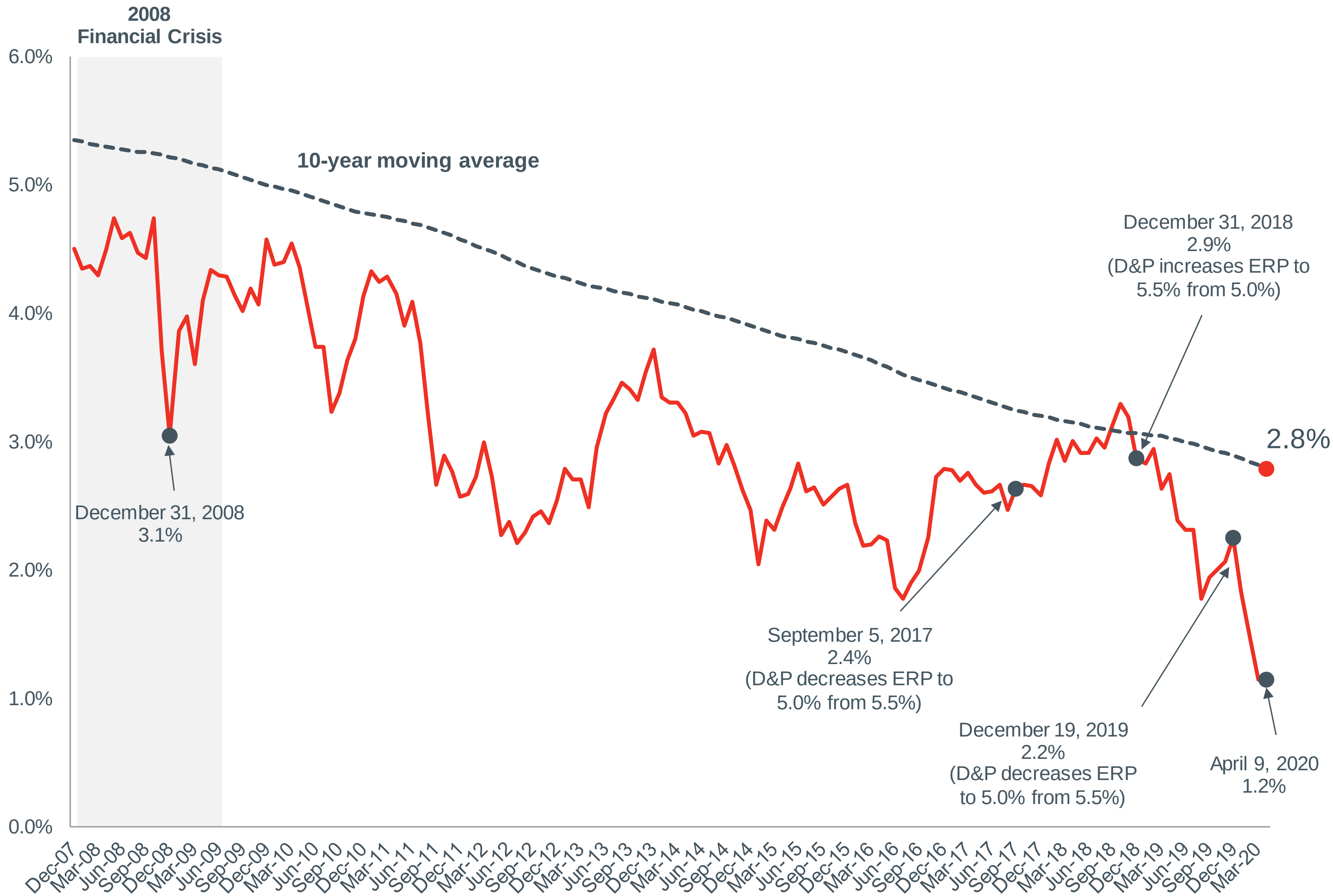
2007 - 2020



Source: Federal Reserve Bank of St. Louis Economic Research and the Bank of England.

20-year U.S. Treasury Yield, including Trailing Average

December 31, 2007 – April 9, 2020



Source: 20-year U.S. government bond series. Board of Governors of the Federal Reserve System.

Risk-Free Rate Normalization – By Buildup

Fisher Equation

Conceptually, the risk-free rate can be (loosely) illustrated as the return on the following two components: *

Risk-free Rate = **Real Rate** + **Expected Inflation**

* Technically, an Inflation Risk Premium should also be added, but it can be positive or negative, with some academic estimates at close to 0%

Risk-Free Rate Normalization – By Buildup

U.S. Example as of March 23, 2020

0.0%	Long-term Real Rate	2.0%
+		+
1.4%	Long-term Inflation Forecasts	2.3%
=		=
1.4%	Long-term Normalized Risk-Free Rate	4.3%
	(Midpoint = 2.9%)	

=> 10-Year Trailing Average on 20-Year U.S. Treasury Yield = 2.8%

Concluded Normalized Rf = 3.0%

The Duff & Phelps Recommended ERP is a Two-Step Process

Step 1: What is a reasonable range of unconditional ERP that can be expected over an entire business cycle?

"What is the range?"

Step 2: Research has shown that ERP is cyclical during the business cycle. We use the term conditional ERP to mean the ERP that reflects current market conditions.

"Where are we in the range?"

Duff & Phelps Recommended U.S. Equity Risk Premium (ERP)

For discount rates developed as of March 25, 2020 (and thereafter)

"Historical" ERP Estimates

+

Forward-looking ERP Estimates

3.5% Range of Unconditional ERP 6.0%

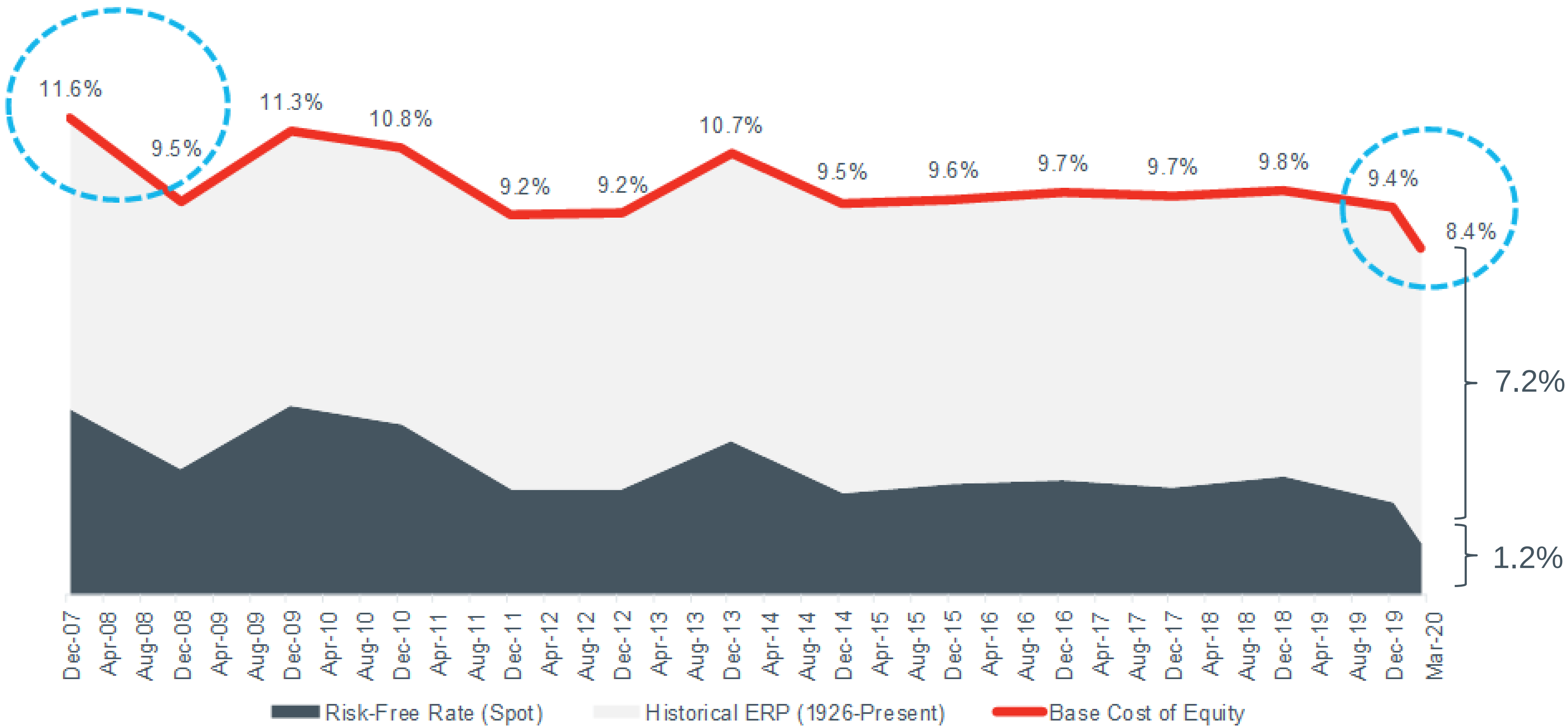
D&P Recommended U.S. ERP

Summary Table of Factors as of March 25, 2020

Factor	Change	Effect on ERP
U.S. Equity Markets	↓	↑
Implied Equity Volatility	↑	↑
Corporate Debt Spreads	↑	↑
EPU and Equity Uncertainty	↑	↑
GDP Growth and GDP Growth Forecasts	↓	↑
Unemployment Environment	↓	↑
Consumer Sentiment	↓	↑
Business Confidence	↓	↑
Sovereign Credit Ratings	↔	↔
Default Spread Model	↑	↑
Damodaran Implied ERP Model	↑	↑

Danger of Using Spot 20-year U.S. Government Yield in Conjunction with Unadjusted "Historical" Equity Risk Premium*

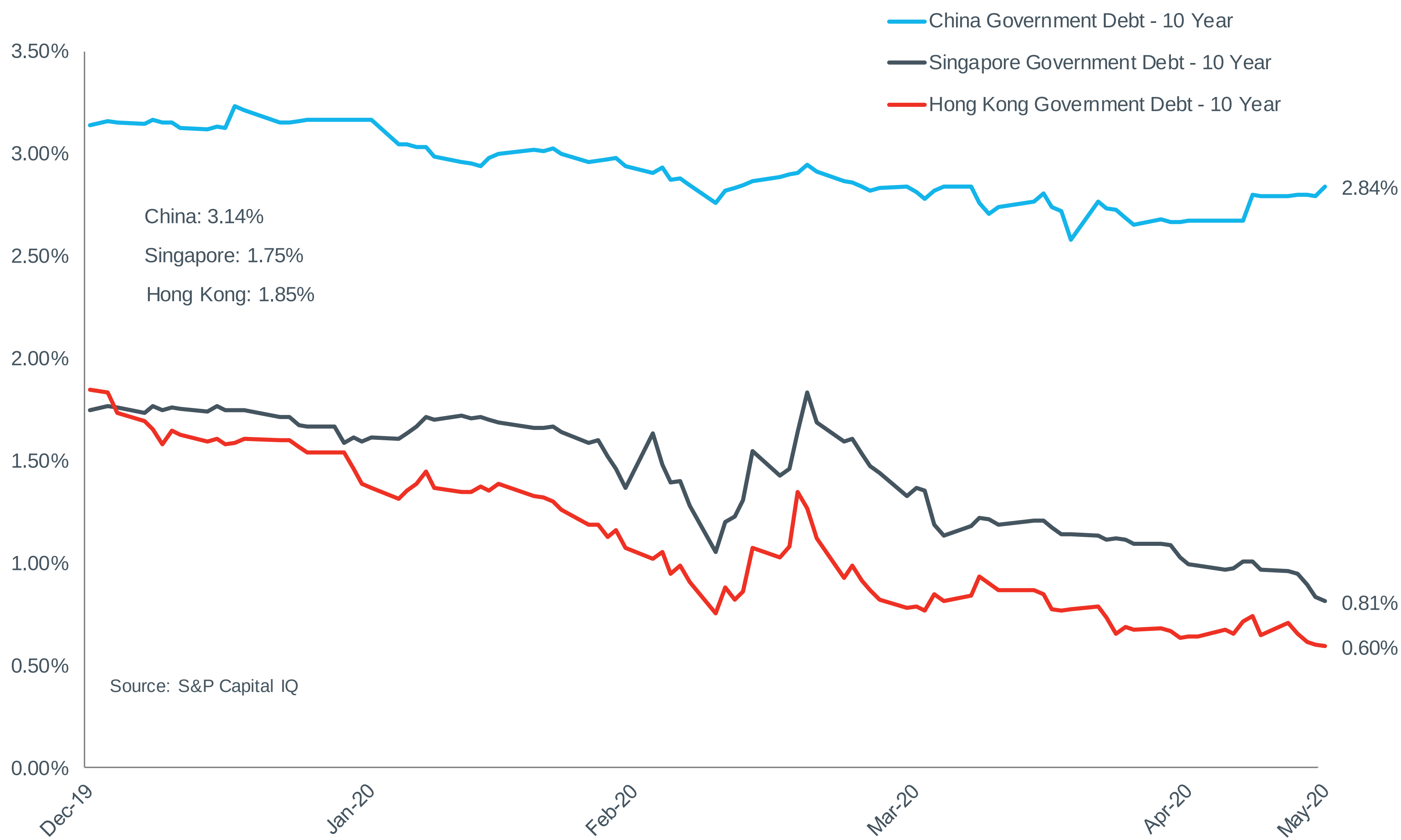
2007 – March 25, 2020



*The Historical Equity Risk Premium is defined as the ERP over the years 1926–Present as of the date of the analysis. For example The Historical Equity Risk Premium for December 2018 spans the years 1926–2018 while the Historical ERP for 2019 spans the years 1926–2019.

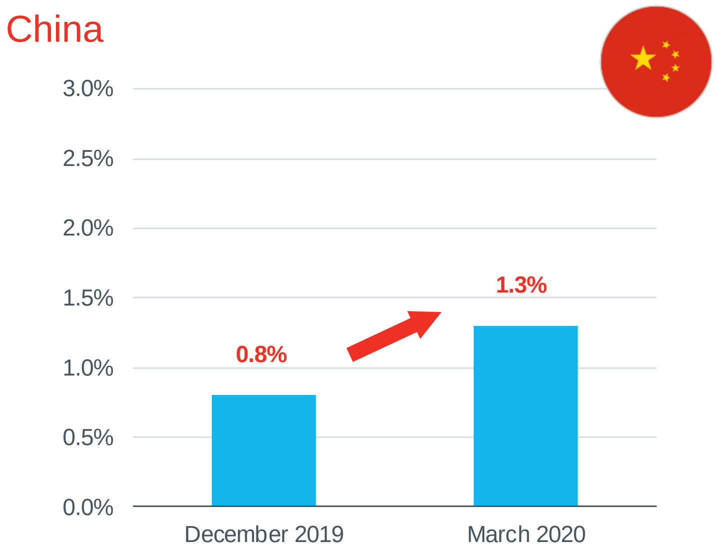
10-year Government Bond Yields: China, Singapore, Hong Kong

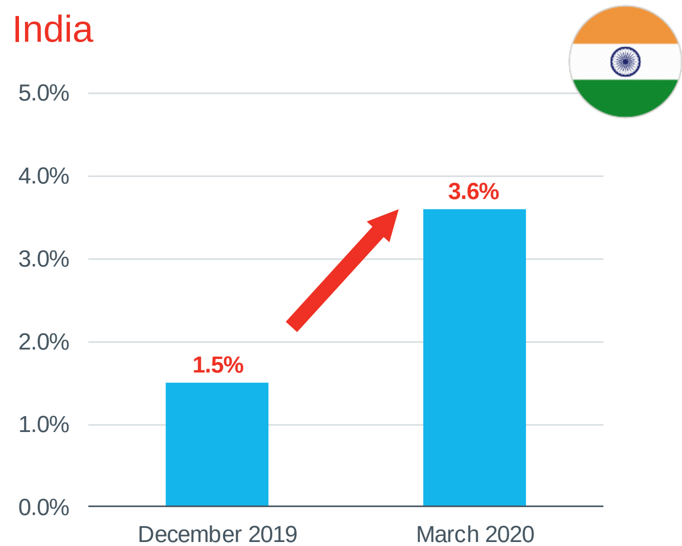
December 31, 2019 – May 15, 2020

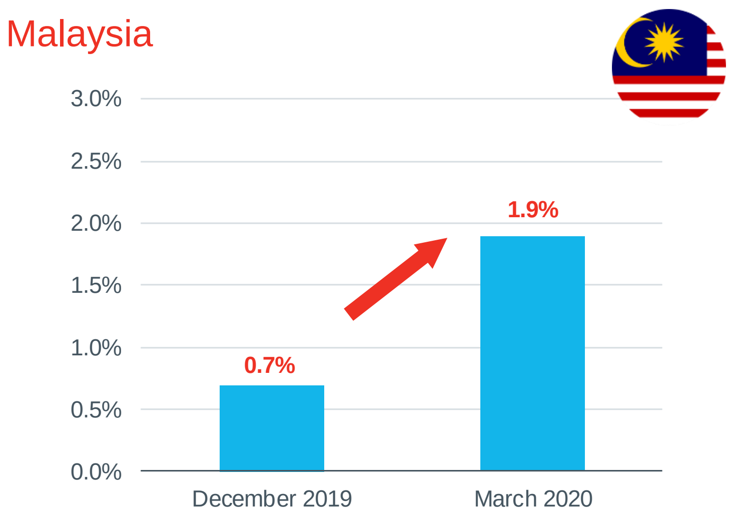


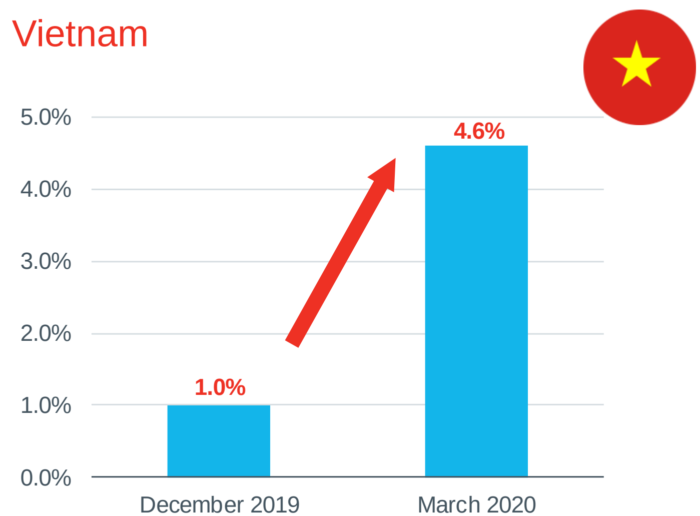
Country Yield Spread Model: Country Risk Premium in U.S. Dollars

Comparison between December 31, 2019 and March 31, 2020









Source : Duff & Phelps Cost of Capital Navigator – International module.

Polling Question 4

Choose one!

Do you anticipate taking a goodwill impairment?

- ❑ Yes
- ❑ No
- ❑ Uncertain at this point
- ❑ Not applicable

Polling Question 4 - ANSWERS

Choose one!

Do you anticipate taking a goodwill impairment?

- ❑ Yes
- ❑ No
- ❑ Uncertain at this point
- ❑ Not applicable

10. Top 10 Valuation Considerations For Goodwill Impairment in COVID-19 Pandemic

Key Takeaways

- Assess if a triggering event has occurred that would require an interim impairment test
- Discussion with various functional managers to assess COVID-19 impacts on PFI
- Establish a “Base Case” under pre-crisis conditions
- Establish the “Current Case” - evaluate the scenarios in the current COVID-19 environment and attached probabilities
- Prepare a DCF under current COVID-19 market conditions

- Avoid (or de-emphasize) the use of alphas and the use of a Discount Rate Adjustment Technique (DRAT)
- Apply a market comparable method (market approach) and run sensitivities on market multiples
- Carefully evaluate any market transaction data
- Estimate (or proxy) the fair value of debt
- Arrive at a recoverable amount conclusion as of the testing date and explain differences from TIC

11. Questions

Audience Questions

Resources:

- Video: Impairment Analysis Under Ind AS 36 with Duff & Phelps' Santosh N
- Duff & Phelps COVID-19 Resource Center
- Duff & Phelps Valuation Advisory Services
- Duff & Phelps Goodwill Impairment Studies

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