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# William Shelton

Managing Director, Head of U.S. Equity Structured Solutions



William (Bill) Shelton started at Deutsche Bank (DB) in June 2014, and heads the Equity Structured Solutions Team within the Equities Division. This includes internal and external retail distribution of structured products, hedging & monetization, and the institutional sales teams for insurance & pensions, endowments and foundations. Bill was previously at Goldman Sachs (eight years) and JP Morgan twice (four years), where he developed large industry-leading retail businesses at both firms. He serves in a leadership capacity within DB on the Americas Equities Management Forum, the Global Equity Derivatives ExCo, and the North American Diversity and Inclusion Council.

Prior to Wall Street, Bill was an award winning entrepreneur for nine years as the founder of Bingwa Software. During his tenure at this technology firm, he was recognized as one of the Top 50 Blacks in the U.S. technology arena, a national finalist for Black Enterprise's Inaugural Business Innovator of the Year Award and numerous other honors. During this period, he also hosted a technology based radio show in Washington, DC (WOL) and Baltimore, MD (WBOL).

# Karan Mehta, CFA

AVP, CROCI Product Specialist - Americas



Karan Mehta is a member of the CROCI Investment Strategy & Valuation Group and is the Product Specialist at Deutsche Bank Asset and Wealth Management's New York office.

Prior to his current role, he worked as part of the Structuring group at Deutsche Bank's Global Markets division in London, where he specialized in development of systematic investment strategy based solutions for institutional and private wealth clients.

Mr. Mehta has over 8 years of experience in global equity markets, across the buy and sell sides in New York, London, India and South Africa. He has a background in quantitative portfolio management and fundamental equity research and holds a degree in Accounting and Finance from Warwick University as well as a Masters in Business Administration from the Indian School of Business. He also holds the Chartered Financial Analyst® designation and is a member of the New York Society of Security Analysts.



# Deutsche Bank CROCI Sectors II USD Index & 5.5% Volatility Control

Q1 2016

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Deutsche Bank Securities Inc., a subsidiary of Deutsche Bank AG, conducts investment banking and securities activities in the United States.

# Definitions



**Book Value** is the value at which an asset is carried on a balance sheet.

**Cash Return On Capital Invested (CROCI)** means the inflation adjusted “economic return” on an issuer’s assets calculated by the CROCI Investment Strategy and Valuation Group.

The **CROCI® Sectors II Index** tracks the performance of the thirty stocks with the lowest positive CROCI® Economic P/Es in the United States, the Eurozone and Japan selected on a periodic basis from the three (of nine) economic sectors with the lowest median CROCI® Economic P/Es.

**Depreciation** is a method of allocating the cost of a tangible asset over its useful life. Businesses depreciate long-term assets for both tax and accounting purposes.

**Enterprise Value** is a measure of the market value of the firm that includes not only financial liabilities (such as debt) but also operational liabilities (such as warranties, pension funding, specific provisions, operating leases, etc.).

**Generally Accepted Accounting Principles (GAAP)** refer to the standard framework of guidelines for financial accounting used in any given jurisdiction.

**Market Capitalization** is the total market value of a company’s outstanding shares.

**Net Income** is a company’s total earnings (or profit). Net income is calculated by taking revenues and adjusting for the cost of doing business, depreciation, interest, taxes and other expenses.

**Net Capital Invested** is the estimated replacement value of the economic asset base, comprising the inflation-adjusted tangible assets, capitalised intangible assets (e.g., brands, R&D), leases and net working capital and net of economic depreciation.

**Price-to-Earnings ratio (P/E)** (or accounting P/E, in this presentation) compares a company’s current share price to its per-share earnings. The CROCI Economic P/E is a measure of valuation that incorporates all of the economic assets and liabilities of a company which are adjusted systematically by the CROCI team and is expressed as the ratio between Enterprise Value/Net Capital Invested to the Cash Return on Capital Invested.

The **MSCI World Index** tracks the performance of stocks in select developed markets around the world, including the United States.

**Return on Equity** is the amount of net income returned as a percentage of shareholders’ equity.

The **S&P 500 Index** tracks the performance of the equity securities of 500 leading U.S. companies and is widely considered representative of the U.S. equity market.

The **EURO STOXX Large Index** tracks the performance of the leading Eurozone stocks and provides a representation of large market capitalization companies in the Eurozone.

The **TOPIX 100 Index** tracks the performance of 100 leading Japanese stocks and is widely considered representative of the Japanese equity market.

# Overview of Deutsche Bank



## In Brief

- Has been a corporate leader for nearly 150 years, offering a wide variety of investment, financial and related products and services to private individuals, corporate entities and institutional clients around the world.
- Headquartered in Frankfurt am Main, Germany
- Largest bank in Germany and one of the largest financial institutions in Europe and the world, as measured by total assets of 1,709 billion euro as of December 31, 2014

## Facts and Figures

- Operations in more than 70 countries
- More than 2,800 branches globally
- More than 90,000 employees in North America, South America, Europe, Asia and Africa

## Global Presence Across Major Regional Hubs

- Frankfurt am Main, London, New York, Sao Paulo, Dubai, Singapore, Hong Kong



# Overview of CB&S Structuring and AWM Platform



## Corporate Banking & Securities (CB&S)

- CB&S comprises the Markets and the Corporate Finance Business Divisions
- Markets Business Division combines the sales, trading and structuring of a wide range of financial market products, including bonds, equities and equity-linked products, derivatives, foreign exchange, money market instruments and securitized instruments

### **CB&S Structuring**

- Over 275 structurers located globally across US, Europe, Asia, Japan and Australia
- Over 1,700 Indices / algorithms available across all asset classes

## Asset and Wealth Management (AWM)

- With EUR 1,159 billion of assets under management, Deutsche AWM ranks among the 10 largest bank-owned asset and wealth manager worldwide as of Mar 31, 2015.
- Presence in ~40 countries and ~135 cities as of Dec 31, 2014
- 158 funds highly ranked by Morningstar<sup>1</sup> as of Mar 31, 2015

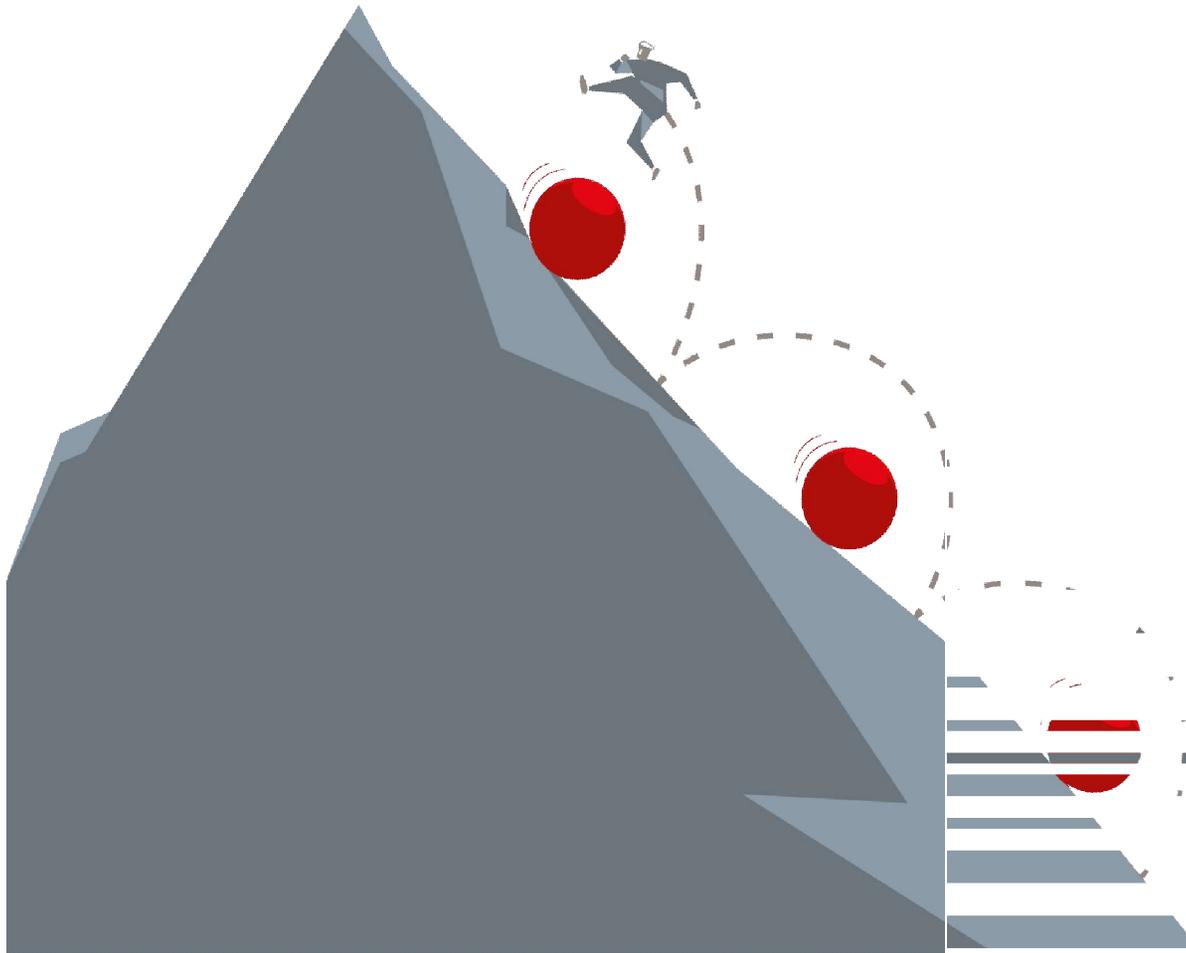
<sup>1</sup>Morningstar Inc. rankings are historical and do not guarantee future results. Rankings are based on the fund's total returns, unadjusted for sales charges, with distributions reinvested. If sales charges had been included, rankings may have been less favorable. Rankings of other classes may vary.

Source: Deutsche Bank, DeutscheAWM Website



## **Cash Return on Capital Invested – “CROCI” Valuation Methodology**

# The CROCI Philosophy



“1. In buying a share of a company, an equity investor becomes a part-owner of that company.

2. A rigorous analysis of a company's fundamentals is essential for assessing the underlying economic valuation. The challenge is to achieve consistency and comparability across all companies globally. This has been at the heart of CROCI since 1996.

3. Once proper due diligence and analysis has taken place, the equity investor can make an informed decision.

”

# CROCI – Cash Return on Capital Invested



## What is CROCI ?

CROCI stands for Cash Return on Capital Invested and is a proprietary investment process based on a valuation technique. A Deutsche Bank trademark, CROCI has aimed to assess the Real Value<sup>1</sup> of companies, sectors and markets since 1996. There are over 850 companies & 64 professionals.



## What does CROCI do ?

There are four key functions performed by the CROCI Team :

1. Research the distortions in reported financial statements and rigorously adjust them to provide a comparable platform for investment and research purposes;
2. Consistently apply the CROCI framework to over 850 companies on a global basis, using experienced people rather than machines;
3. Provide CROCI analysis on equity markets—we have been doing this since 1996;
4. Develop standardized and bespoke investment solutions for retail and institutional clients. These can be delivered in different formats (SMAs, funds, structured notes and more).



## Why CROCI ?

Markets are not 100% efficient. Analyzing company fundamentals in an objective and consistent manner leads to a better understanding of companies which in turn can lead to better stock picking.



## History

CROCI originated in 1996 as a valuation technique in DB Equities Research. The team was integrated into Deutsche Asset & Wealth Management in Q4 2013.



## Published CROCI indices

There are multiple CROCI indices which have been used to model concentrated investment strategies using various product wrappers by various DB entities throughout the world.

# Introducing the CROCI Valuation Methodology



## The Problem

- In theory, P/E ratio should work as a valuation methodology; in practice it doesn't always provide a complete picture of a company's underlying economic valuation.
- There is great difficulty in comparing the valuation of companies that are in different sectors or from different countries.
- That's because varying accounting standards make consistent analysis and therefore valuation comparisons difficult.



## The Solution

- Developed in 1996, CROCI is a systematic proprietary equity valuation methodology that seeks to make the valuations of all covered companies more comparable—regardless of their sector or geography.
- The team covers 830 companies with approximately 60 professionals.



## How It Works

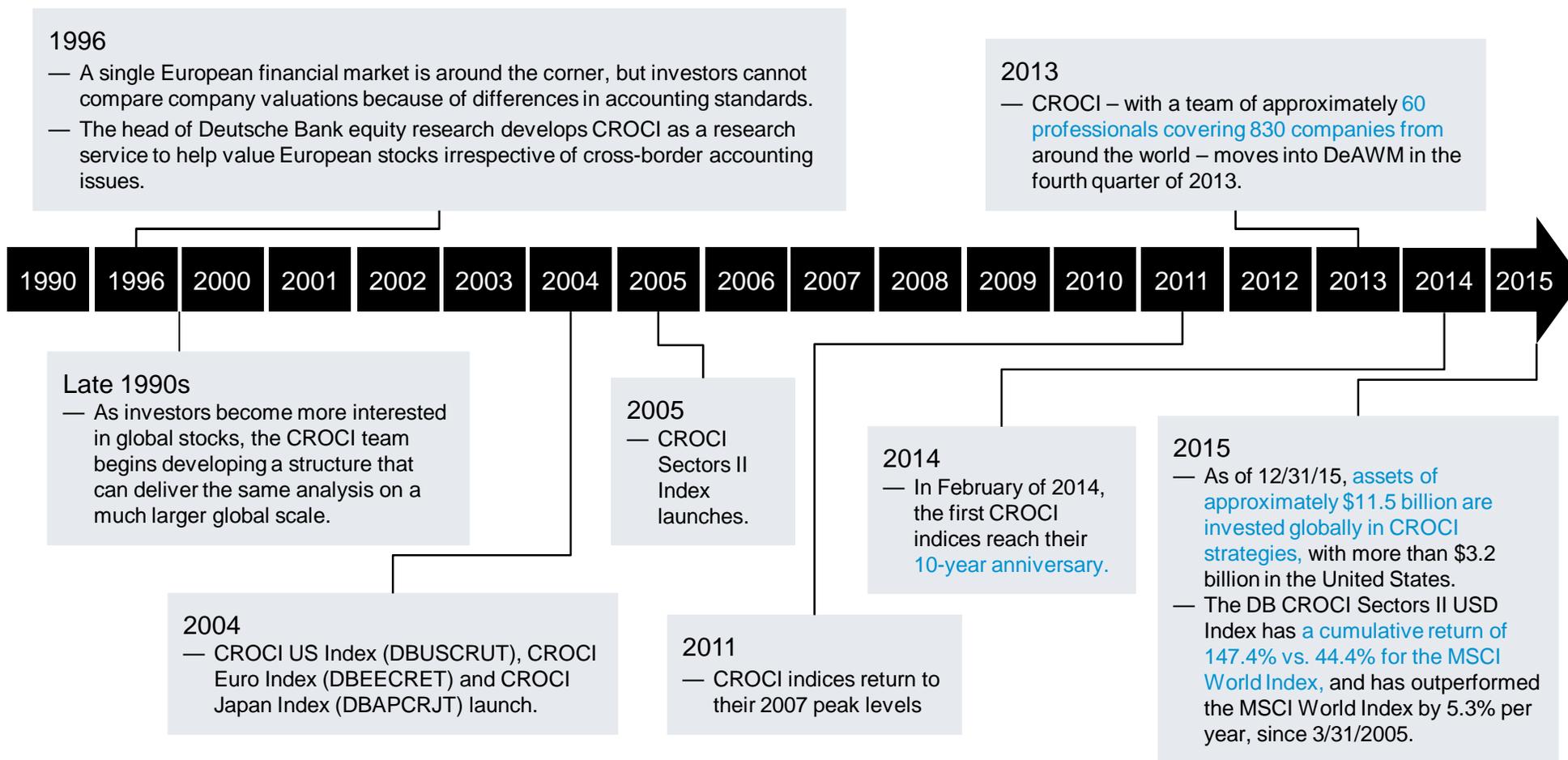
- CROCI converts financial-statement data into a set of economic inputs that are used to calculate a valuation metric called CROCI Economic P/E, which aims to be more comparable across markets and sectors.
- These calculations include adjustments for inflation, depreciation, the recognition of intangible assets and the inclusion of off-balance-sheet items such as operating leases.
- Once the data has been adjusted, the economic cash return that a company is generating for stockholders can be calculated and compared to the economic enterprise value and net capital invested.
- The CROCI Economic P/E is used as the primary metric in building CROCI indices.

CROCI represents one of many possible ways to analyse and value stocks. Potential investors must form their own view of the CROCI methodology and evaluate whether CROCI and investments associated with CROCI are appropriate for them. The CROCI team does not provide investment advice.

Source: Deutsche Bank

# CROCI History

## A timeline



Source: Deutsche Bank CROCI team as of 8/19/15 unless otherwise noted.

Past performance neither indicates nor guarantees future results. CROCI indices are sponsored by DB AG London. Performance information for indices was not calculated by an independent calculation agent. The performance data shown above does not reflect any fees and/or costs associated with financial products based on the applicable index and the return on such financial products would have been lower as a result of such fees and/or costs. It is not possible to invest directly in an index. The members of the CROCI team do not provide investment advice or investment management. MSCI World Index returns are in U.S. dollars. The performance data shown above DOES NOT include the reinvestment of dividends.

# The CROCI<sup>®</sup> process



Traditional evaluation: Accounting P/E ratio compares a company's current share price to its per-share accounting earnings

## The CROCI<sup>®</sup> approach

### Accounting for "hidden" liabilities

Liabilities should include off-balance-sheet items such as operational leases, pension underfunding, warranties and future provisions.

### Approximating the replacement value of assets

Book value is typically represented at original cost, which means depreciation is understated by the impact of inflation.

### Depreciating similar assets in the same manner

Similar assets that are located in different countries should be depreciated over the same economic lives irrespective of the accounting and tax depreciation methodology employed.

### Estimating the value of unreported assets

Investments in unreported assets such as branding and research and development (R&D) should be capitalized and depreciated.

## CROCI<sup>®</sup> Economic P/E

Adjusted economic data feeds into a valuation metric called "CROCI Economic P/E," which aims to make companies more comparable across markets and sectors—and is the primary metric in building CROCI<sup>®</sup> indices and investment strategies.

# The CROCI Valuation Methodology

## Going from accounting to economic data



### Accounting Data

<b>Book value</b>
Is historical-cost-accounted and ignores intangible economic assets, such as research and development and brand advertising.
<b>Return on equity</b>
Does not represent an economic return (e.g., depreciation is not charged economically and asset life is inconsistent).
<b>Market capitalization</b>
Only includes the value of the equity, ignoring debt and other calls on shareholders.
<b>Accounting P/E</b>
May not reflect economic reality and not comparable across industries and sectors over time.
$\text{Accounting P/E} = \frac{\text{Price/Book Value}}{\text{Return of Equity}}$



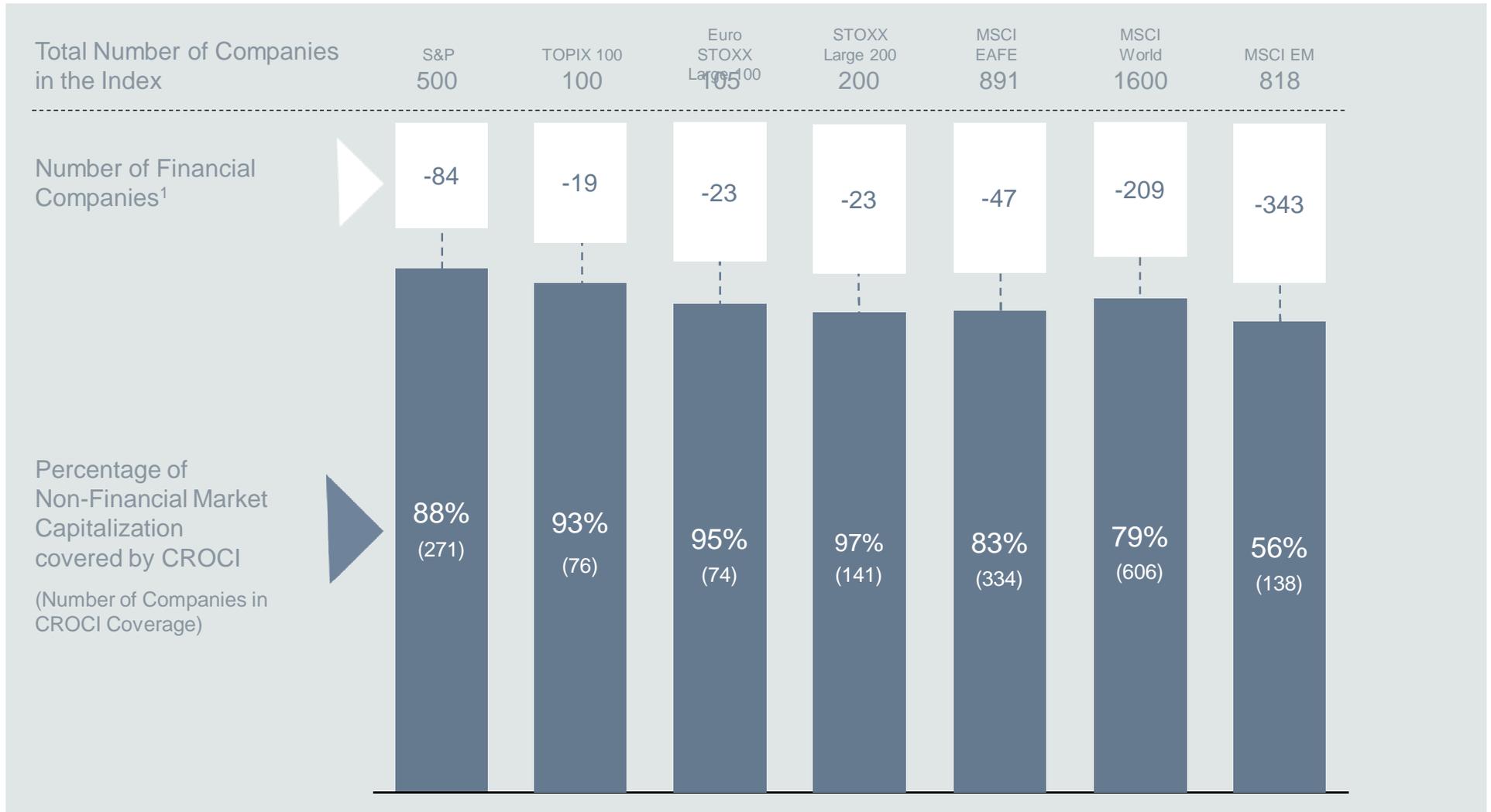
### Economic Data

<b>Net capital invested</b>
Is adjusted for inflation and also includes capitalized intangibles, such as research and development and brand advertising.
<b>Cash Return On Capital Invested (CROCI)</b>
The cash return over the life of the assets. Depreciation is charged economically, with similar assets having similar lives.
<b>Enterprise value</b>
Includes financial debt and other liabilities, such as operating leases, warranties and pension underfunding.
<b>CROCI Economic P/E</b>
Seeks consistency and comparability between stocks, sectors and countries.
$\text{CROCI Economic P/E} = \frac{\text{Enterprise Value/Net Capital Invested}}{\text{CROCI}}$

CROCI represents one of many possible ways to analyse and value stocks. Potential investors must form their own view of the CROCI methodology and evaluate whether CROCI and investments associated with CROCI are appropriate for them. The CROCI team does not provide investment advice.

# Investment development – the company database

## Comprehensive coverage across major markets



# Accounting for hidden liabilities: Ford Motor Company

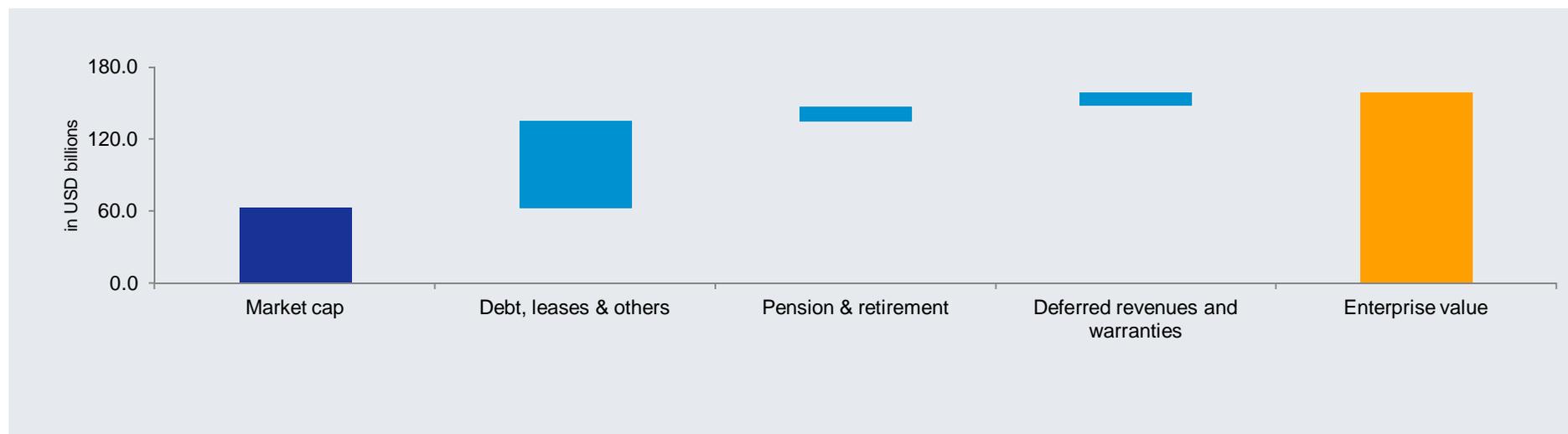


- Off balance sheet items such as operational leases, pension underfunding, warranties, future provisions should be recognized as liabilities.

## Ford Motor Company: Accounting vs. Economic metrics

Accounting P/E	15.2x	CROCI Economic P/E	123.2x
Return on equity	22.0%	CROCI	0.85%

- The various components of Ford's Enterprise Value are shown below:



Source: Deutsche Bank, Company data, 2015 (data as of 12/31/2014)

# Depreciating similar assets in the same manner:

## Airlines



- Similar assets that are located in different countries should be depreciated over the same economic lives irrespective of the accounting and tax depreciation methodology employed.
- For instance, Deutsche Lufthansa takes advantage of German tax benefits from accelerated depreciation which causes the book value of its aircrafts to appear unrealistically low. On the other hand, British Airways does not benefit from the same tax treatment and therefore depreciates its aircrafts over a longer time period which causes book value to be incomparable to Lufthansa's.
- Given below are the estimated life of aircrafts based on company accounts and the residual value for different airline companies:

### Air China

Estimated Life: 5 to 30 years

Residual value: 5%

### Cathay Pacific

Estimated Life: 20 years

Residual value: Lower of 10% of cost or realizable value

### International airline group (British Airways)

Estimated Life: 18 to 25 years

Residual value: Not specified

### Air France

Estimated Life: 20 years (can be extended to 25 years)

Residual value: 0%

### Deutsche Lufthansa

Estimated Life: 12 years

Residual value: 15%

### Ryanair

Estimated Life: 18 to 25 years

Residual value: Not specified

Source: Deutsche Bank, Company data, 2015

# Approximating the replacement value of assets:

## Exxon Mobil



- Book value is represented at original cost which means depreciation is understated by the impact of inflation.
- According to ExxonMobil 2014 Annual Report, the book value of \$174 billion did not reflect the impact of inflation on the assets which meant that depreciation was not reflected in the replacement cost of the assets.
- When adjusted for inflation, the “real” book value nearly doubled which also doubled the valuation.

Accounting data		Economic data	
Market cap (\$ millions)	\$416,511	Enterprise value (\$ millions)	\$355,293
Book value (\$ millions)	\$174,399	Net capital invested (\$ millions)	\$313,385
Return on equity	16.6%	CROCI	4.1%
Accounting P/E	14.4x	CROCI Economic P/E	27.7x

Source: Deutsche Bank, Company data, 2015 (data as of 12/31/2014)

# Estimating the value of unreported assets:

## Pfizer



- Capital investment for R&D (via R&D expense) and brand (via advertising expense) should be capitalized and depreciated to better recognize the capital investment for these unreported assets. After accounting for this expense, the economic net capital invested reflects all of the capital invested and enables this unreported asset to be included in the CROCI valuation
- Pharmaceutical companies, such as Pfizer, make large investments into their pipelines which are not represented in their assets, but reflected within their CROCI adjusted assets.

Pfizer Inc: Accounting vs. Economic metrics			
Accounting P/E	13.8x	CROCI Economic P/E	17.1x
Return on equity	18.4%	CROCI	15.1%

Gross Assets Components (\$ million)	Accounting Book Value	Adjustment (as percentage)	Real Capital
Gross tangible fixed assets	\$27,225	13%	\$30,830
Capitalized intangibles	\$0	100%	\$87,614
Others	-\$13,094		\$11,840
<b>Gross Assets</b>	<b>\$14,131</b>	<b>822%</b>	<b>\$130,284</b>

Source: Deutsche Bank, Company data, 2015 (data as of 12/31/2014)

# The Impact of CROCI Adjustments



Economic valuations can substantially change stock rankings, once the CROCI approach has been applied to reported proforma accounts.

For example, of these ten companies:

- Apple moves to become the **cheapest**, having been in the expensive half
- Gazprom becomes the third most **expensive**, having been the cheapest

Company	Valuation 2014E Accounting P/E (ranking)		Valuation 2014E Real Economic P/E (ranking)	Ranking
Amazon	173.3 (10)		47.6 (10)	
Amgen	15.2 (7)	Real Value	16.4 (3)	RISES by 5 places
Apple	12.9 (6)		14.0 (1)	
Gazprom	3.6 (1)	Apparent Value	29.0 (8)	FALLS by 7 places
General Motors	8.5 (3)		25.7 (7)	
IBM	11.2 (5)	Real Value	15.8 (2)	
LVMH	17.0 (8)		18.2 (4)	
Orange	9.5 (4)	Apparent Value	43.1 (9)	
Petrobras	8.0 (2)		10.2 (5)	
Pepsi	17.5 (9)		20.1 (6)	

Source: Deutsche Bank, Company data as of Jan. 3, 2014. Data in brackets show rank of the stock on Accounting P/E. These examples are for illustrative purposes only and do not represent any investment recommendation or investment advice. Assessment of Real and Apparent Value is as per CROCI methodology. Investors may have a different view than what is presented above. Data adjustments can impact company financials in different ways, and to a greater extent at some than others. Past Performance is not indicative of future results.

# The CROCI Valuation Methodology

## What it does vs. what it doesn't do



### What CROCI tries to do:

Identify and provide exposure to economic, inflation-adjusted value in the market.

---

Attempts to select “underpriced” stocks

### What CROCI doesn't do:

Identify the “best-performing” stocks in the market.

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Participate in “momentum” or “bubble” markets—*i.e.*, rising or falling momentum-driven markets (as the CROCI methodology may not add value in this environment because investors are not focused on valuation).

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Use Deutsche Bank analyst forecasts, company predictions, or any macro outlook.

Include stocks of financial companies

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# CROCI Sectors II USD Index

## Systematic Selection Process



### Identify the Universe

Start with a large-cap-selection pool of stocks in the U.S., Eurozone and Japan, excluding financials, that are included in the CROCI database

— Top 251 of S&P 500 Index<sup>(1)</sup> + EURO STOXX Large Index + TOPIX 100 Index

### Identify the Three Most Underpriced Sectors

Select three sectors with the lowest median CROCI Economic P/E

— Consumer Discretionary — Industrials — Telecommunication Services  
— Consumer Staples — Energy — Healthcare  
— Information Technology — Utilities — Materials

### Identify the Most Underpriced Stocks

— Select 10 stocks with the lowest positive CROCI Economic P/E from each of the three sectors with the lowest median CROCI Economic P/E<sup>(2)</sup>

### Rebalance the Index Regularly

— Equal weighted, 30 stocks

(1) Based on largest market capitalisation

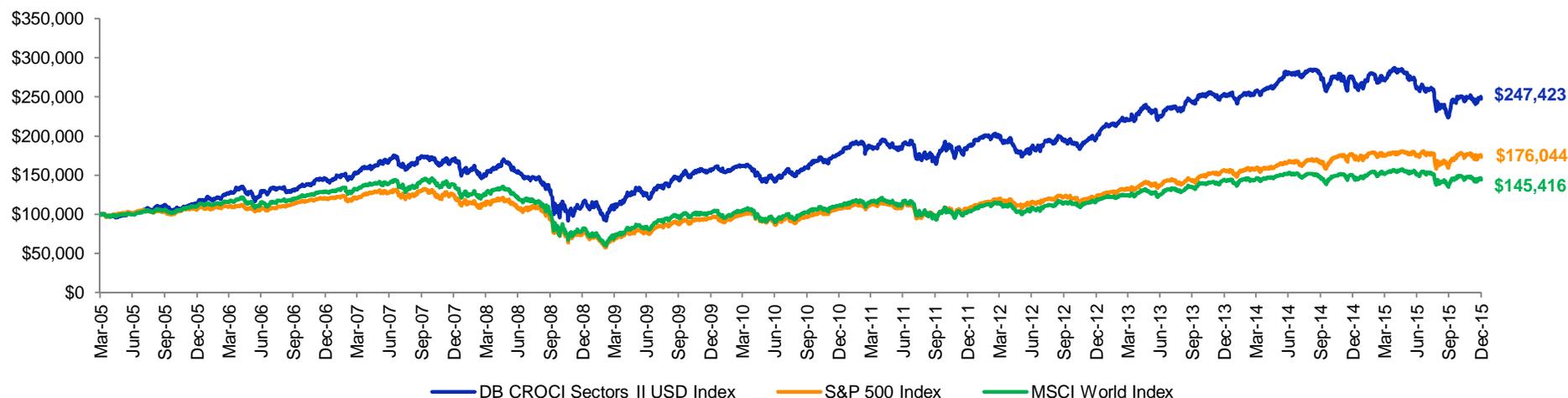
(2) In cases where there are fewer than 30 stocks in a chosen sector with a positive CROCI Economic P/E, substitute stocks are selected from the stocks in the remaining sectors based solely on lowest positive CROCI Economic P/E. This is done to avoid selecting stocks in the sector that have a CROCI Economic P/E greater than the sector median P/E—i.e., more expensive. This will occasionally lead to modest exposure to additional sectors.

# Historical Index Performance and Analysis

## CROCI Sectors II USD Index (ticker: DBGLS2UP)



### Historical Index Performance, 03/31/05 – 12/31/15



### Index Performance Analysis (03/31/05 – 12/31/15)

	Cumulative Return	Annualized Return	Annualized Volatility	Sharpe Ratio
DB CROCI Sectors II USD Index	147.4%	8.8%	17.3%	0.51
S&P 500 Index	73.1%	5.2%	20.2%	0.26
MSCI World Index	44.4%	3.5%	17.4%	0.20

Source: Deutsche Bank and Bloomberg as of 12/31/15.

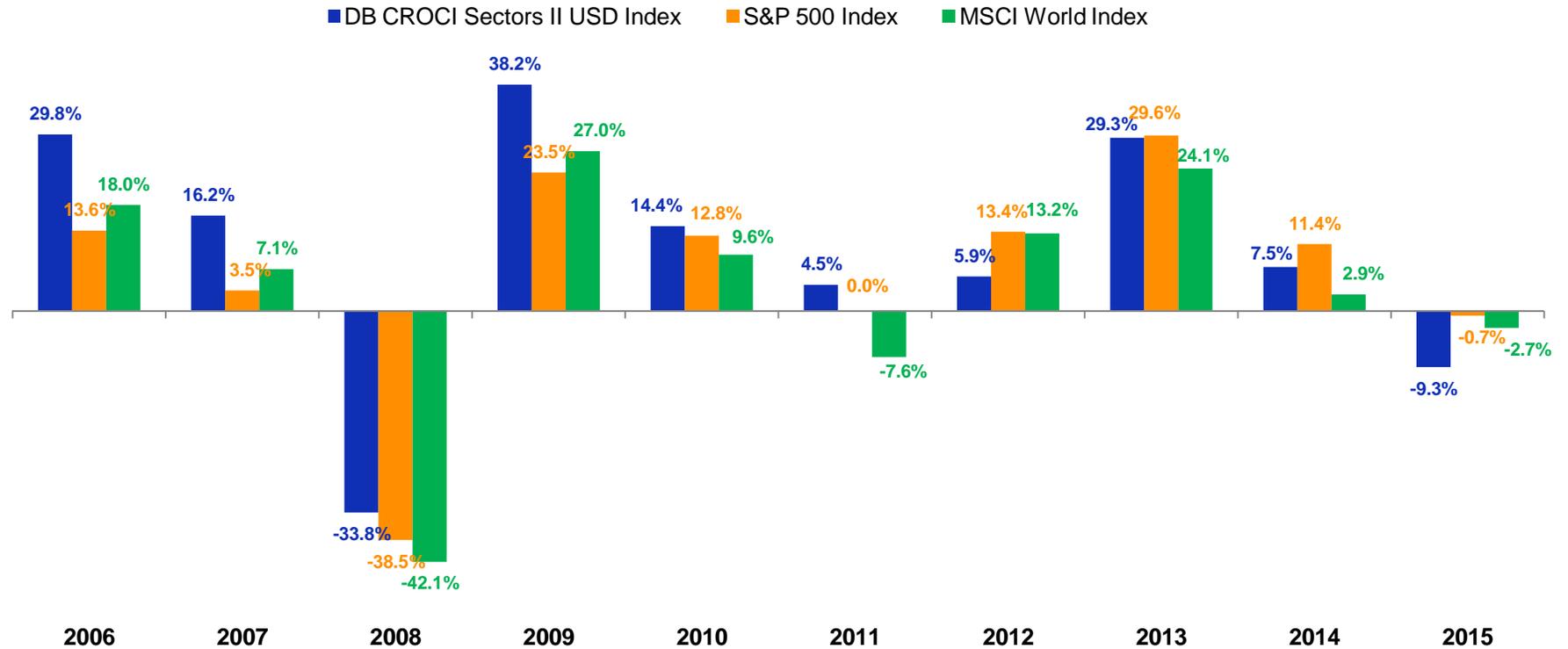
Past performance neither indicates nor guarantees future results. CROCI indices are sponsored by DB AG London. Performance information for indices was not calculated by an independent calculation agent. The performance data shown above does not reflect any fees and/or costs associated with financial products based on the applicable index and the return on such financial products would have been lower as a result of such fees and/or costs. It is not possible to invest directly in an index. The members of the CROCI team do not provide investment advice or investment management. MSCI World Index returns are in U.S. dollars. Volatility is measured by standard deviation of daily returns. The performance data shown above DOES NOT include the reinvestment of dividends.

# Annual Index Returns

## CROCI Sectors II USD Index (ticker: DBGLS2UP)



12/31/05 – 12/31/15



Source: Deutsche Bank and Bloomberg as of 12/31/15.

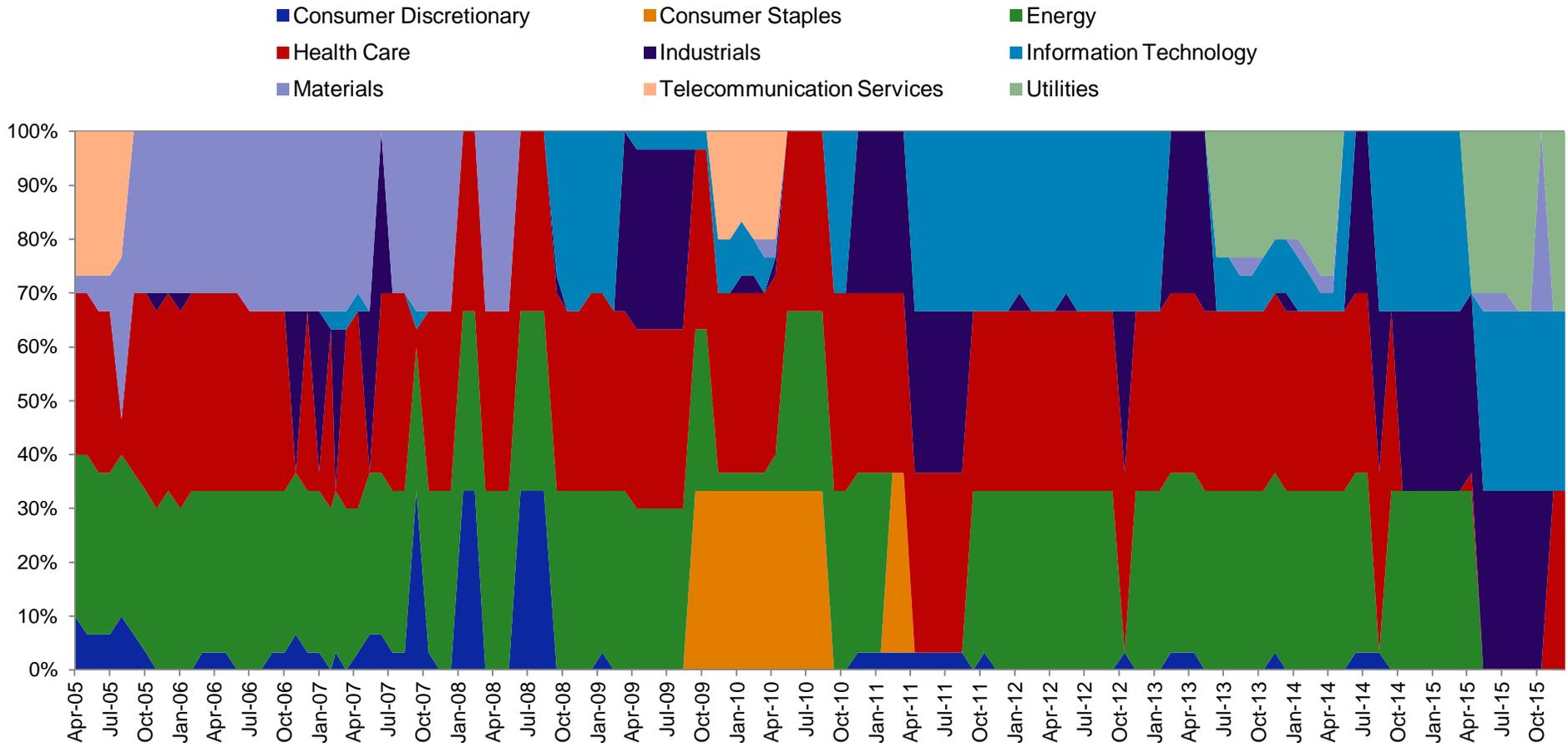
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# Historical Sector Allocations

## CROCI Sectors II USD Index (ticker: DBGLS2UP)



DB CROCI Sectors II USD Index (3/31/05 – 12/31/15)



Source: Deutsche Bank and Factset as of 12/31/15.

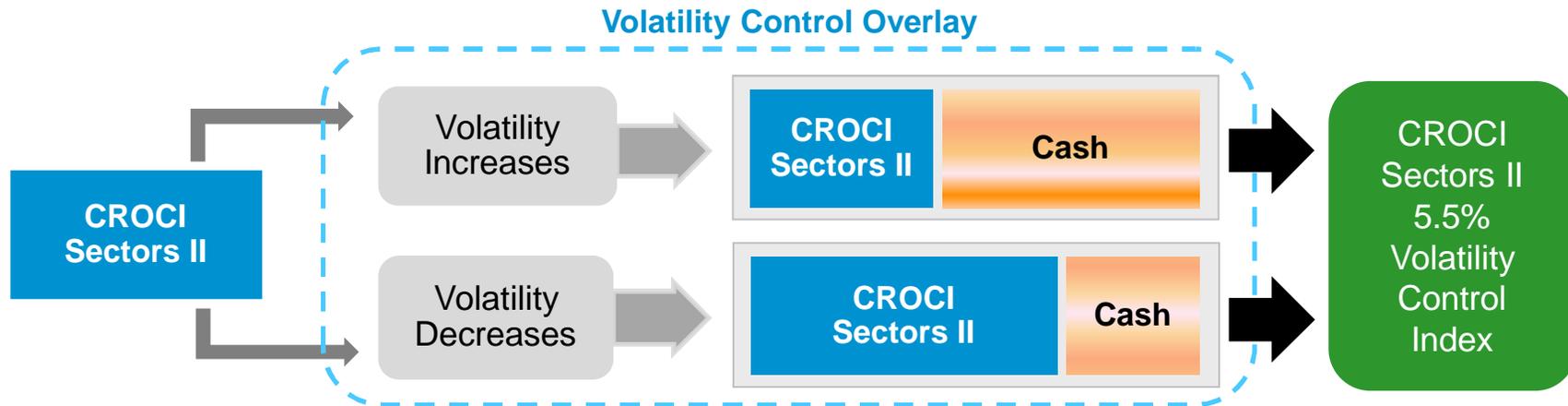
Past allocations neither indicates nor guarantees future allocations. CROCI indices are sponsored by DB AG London. Performance information for the CROCI Sectors Index was not calculated by an independent calculation agent. The members of the CROCI team do not provide investment advice or investment management.



## **Deutsche Bank CROCI Sectors II USD 5.5% Volatility Control Index**

# CROCI Sectors II 5.5% Volatility Control Index

## How Volatility Control Works



### Volatility Control Overlay

- The Volatility Control Overlay dynamically adjusts the CROCI Sectors II Volatility Control Index's (the "CROCI Sectors VC Index") notional exposure between two components: DB CROCI Sectors II USD PR Index (the "CROCI Sectors Index") and Cash (represented by the Deutsche Bank Fed Funds Effective Rate Total Return Index (the "Fed Funds Index")).
- The CROCI Sectors VC Index's calculation agent determines the realized volatility of the CROCI Sectors Index using the higher of the 20- and 40- day realized volatility of such index (each annualized).
- As realized volatility of the CROCI Sectors Index increases, the Volatility Control Overlay decreases the CROCI Sectors VC Index's exposure to the CROCI Sectors Index and increases its exposure to Cash.
- Conversely, as realized volatility of the CROCI Sectors Index decreases, the Volatility Control Overlay increases the CROCI Sectors VC Index's exposure to the CROCI Sectors Index and decreases its exposure to Cash.
- CROCI Sectors VC Index adjusts its notional exposure between CROCI Sectors and Cash with the aim of maintaining an intended target volatility level of 5.5%.
- To reduce turnover, the reallocation between CROCI Sectors Index and Cash each day cannot be more than 10%.
- The min and max allocations to CROCI Sectors are 0 and 100% respectively.
- The cash exposure earns interest at the Fed Funds effective overnight rate.

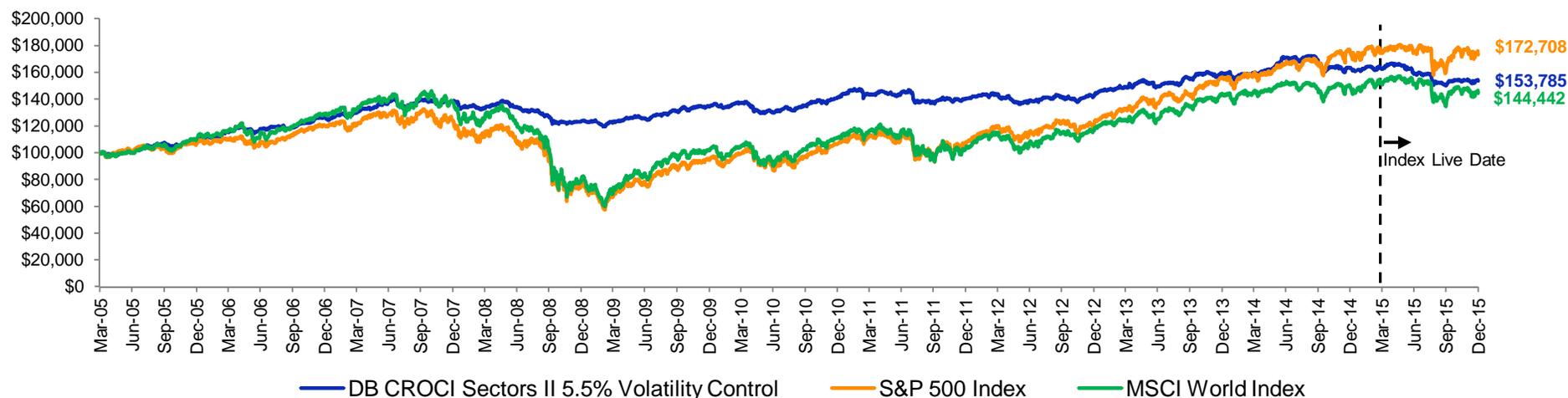
Source: Deutsche Bank

# Backtested Index Performance and Analysis

## CROCI Sectors II USD 5.5% Volatility Control Index



### Backtested Index Performance, 03/31/05 – 12/31/15



### Index Performance Analysis (03/31/05 – 12/31/15)

	Cumulative Return	Annualized Return	Annualized Volatility	Sharpe Ratio
DB CROCI Sectors II USD 5.5% Volatility Control Index	53.6%	4.1%	5.6%	0.73
S&P 500 Index	73.1%	5.2%	20.2%	0.26
MSCI World Index	44.4%	3.5%	17.4%	0.20

Source: Deutsche Bank and Bloomberg as of 12/31/15.

While the indices underlying the CROCI Sectors VC Index have been calculated on a live basis for more than seven years, the CROCI Sectors VC Index has been calculated on a live basis only since March 13, 2015 and therefore has a very limited performance history. Therefore, illustrated values for the portion of the 10-year period that were prior to March 13, 2015 represents hypothetical historical information only and do not reflect actual returns. No actual investment which allowed tracking of the performance of the CROCI Sectors VC Index was possible before March 13, 2015. Past performance neither indicates nor guarantees future results. Performance information for indices was not calculated by an independent calculation agent. No representation is made that any trading strategy or account will or is likely to achieve profits or losses similar to those shown. Alternative modeling techniques or assumptions might produce significantly different results and prove to be more appropriate. The performance data shown above does not reflect any fees and/or costs associated with financial products based on the applicable index and the return on such financial products would have been lower as a result of such fees and/or costs. The members of the CROCI team do not provide investment advice or investment management. MSCI World Index returns are in U.S. dollars. Volatility is measured by standard deviation of daily returns. The performance data shown above DOES NOT include the reinvestment of dividends. See Risk Factors for more information.



## **Risk Factors and Important Information**

# Risk Factors



**Before purchasing a financial product based on the CROCI Sectors VC Index or the CROCI Sectors Index, potential purchasers should carefully consider the following selected risk factors as well as the matters set forth in the relevant disclosure documents, including the risk disclosure for such financial product.**

## **Selected Risk Factors for CROCI VC Index and CROCI Sectors Index:**

**CROCI METHODOLOGY STRATEGY RISK** — The Deutsche Bank proprietary CROCI methodology aims to identify underpriced companies by making the valuations of various companies more comparable. However, no assurance can be given that the CROCI methodology will in fact be able to identify underpriced companies. For example, the CROCI Economic P/E is calculated by reference to publicly available information, but is adjusted on assumptions made by the CROCI Investment Strategy and Valuation Group that subsequently may prove to have been incorrect. Furthermore, the CROCI Economic P/E is determined based on historical information and therefore does not guarantee future results. It is possible that the CROCI methodology may not be successful at choosing underpriced companies.

**THE CROCI SECTORS INDEX IS SUBJECT TO STRATEGY RISK** — The CROCI Sectors Index is intended to reflect the performance of thirty stocks selected from three industry sectors in a selection pool of large capitalization stocks included in (i) approximately the top half (measured by largest market capitalization) of the S&P 500<sup>®</sup> Index, (ii) the stocks constituting the EURO STOXX<sup>®</sup> Large Index and (iii) the stocks constituting the TOPIX 100 Index, in each case excluding restricted stocks, financial stocks and stocks not covered by the CROCI Investment Strategy and Valuation Group. The three industry sectors with the lowest median CROCI Economic P/Es are identified and ten stocks with the lowest positive CROCI Economic P/Es are selected from each of these three identified sectors. However, there is no assurance that (i) the three industry sectors with the lowest median CROCI Economic P/Es will outperform the other industry sectors or (ii) the ten stocks with the lowest CROCI Economic P/Es from each of these three sectors will outperform the remaining stocks in the S&P 500<sup>®</sup> Index, the EURO STOXX<sup>®</sup> Large Index or the TOPIX 100 Index. If the strategy of the CROCI Sectors Index is not successful, the level of the CROCI Sectors Index, and consequently the level of the CROCI Sectors VC Index and the return on a financial product based on the CROCI Sectors Index or the CROCI Sectors VC Index, may be adversely affected. Even if the strategy of the CROCI Sectors Index is successful and it outperforms the S&P 500<sup>®</sup> Index, the EURO STOXX<sup>®</sup> Large Index or the TOPIX 100 Index, the levels of the CROCI Sectors Index and the CROCI Sectors VC Index may decline, which may adversely affect the return on a financial product based on the CROCI Sectors Index or the CROCI Sectors VC Index.

**THE CROCI SECTORS INDEX AND THE CROCI SECTORS VC INDEX ARE SUBJECT TO CURRENCY EXCHANGE RATE RISK** — Because the CROCI Sectors Index may consist of stocks denominated in non-U.S. dollar currencies that are converted into U.S. dollars for purposes of calculating the level of the CROCI Sectors Index, the CROCI Sectors Index and the CROCI Sectors VC Index are subject to currency exchange rate risk with respect to each of the non-U.S. dollar currencies represented in the CROCI Sectors Index. The net exposure to the currency exchange rate risk will depend on the extent to which the non-U.S. dollar currencies represented in the CROCI Sectors Index strengthen or weaken against the U.S. dollar and the relative weight of each non-U.S. dollar currency represented in the CROCI Sectors Index. If, taking into account such weighting, the U.S. dollar strengthens against the component currencies as a whole, the levels of the CROCI Sectors Index and the CROCI Sectors VC Index will be adversely affected.

**THE VOLATILITY CONTROL MECHANISM MAY NOT ALWAYS SUCCESSFULLY MAINTAIN THE TARGET VOLATILITY** — The CROCI Sectors VC Index is intended to reflect the performance of a dynamic allocation strategy that adjusts the CROCI Sectors VC Index's notional exposure between the CROCI Sectors Index and the Fed Funds Index, with the aim of maintaining an intended fixed target volatility level of 5.5% each day, calculated by reference to the higher of the twenty- and forty-day realized volatility of the CROCI Sectors Index (the "CROCI Realized Volatility"). The CROCI Sectors VC Index is subject to a maximum notional exposure of 100% to the CROCI Sectors Index and will not adjust its exposure to the CROCI Sectors Index by more than 10% on any day. Due to these limitations, the CROCI Sectors VC Index may not be able to maintain a fixed target volatility level of 5.5% each day. For example, if the CROCI Realized Volatility increases or decreases significantly on any day, due to the 10% daily adjustment limit, the CROCI Sectors VC Index may not be able to reduce or increase its exposure to the CROCI Sectors Index sufficiently to keep a target volatility level of 5.5% on such day. Furthermore, if the CROCI Realized Volatility is less than 5.5%, the CROCI Sectors VC Index may have a 100% exposure to the CROCI Sectors Index, but a target volatility level less than 5.5%. Because the CROCI Sectors VC Index's exposure to the CROCI Sectors Index on each day is calculated based on the historical realized volatility of the CROCI Sectors Index, the realized volatility of the CROCI Sectors VC Index could differ significantly from the target volatility level. This could have an adverse effect on the level of the CROCI Sectors VC Index, and consequently the return on a financial product based on the CROCI Sectors VC Index. Even if the strategy of the CROCI Sectors VC Index is successful, the CROCI Sectors VC Index may decline or underperform the S&P 500<sup>®</sup> Index, the EURO STOXX<sup>®</sup> Large Index or the TOPIX 100 Index, which may adversely affect the return on a financial product based on the CROCI Sectors VC Index.

# Risk Factors



## General Selected Risk Factors:

**THE CROCI SECTORS VC INDEX HAS VERY LIMITED PERFORMANCE HISTORY** — Calculation of the CROCI Sectors VC Index began on March 13, 2015. Therefore the CROCI Sectors VC Index has very limited performance history and no actual investment which allowed tracking of the performance of such index was possible before its live date. The performance data prior to its live date shown in this presentation has been retrospectively calculated using historical data and the current methodology, and does not reflect actual performance. Although the index sponsor believes that the retrospective calculations represent accurately and fairly how the index would have performed before its live date, the index did not, in fact, exist before its live date. Furthermore, the index methodology was designed, constructed and tested using historical market data and based on knowledge of factors that may have possibly affected its performance. The returns prior to its live date were achieved by means of a retroactive application of such back-tested index methodology designed with the benefit of hindsight. It is impossible to predict whether the index will rise or fall. The actual performance of the index may bear little relation to its retrospectively calculated performance.

**DEUTSCHE BANK AG, LONDON BRANCH, AS THE SPONSOR AND CALCULATION AGENT OF THE CROCI SECTORS VC INDEX AND THE CROCI SECTORS INDEX, MAY ADJUST BOTH INDICES IN A WAY THAT AFFECTS THEIR RESPECTIVE LEVELS AND MAY HAVE CONFLICTS OF INTEREST** — Deutsche Bank AG, London Branch (“Deutsche Bank”) is the sponsor and the calculation agent of the CROCI Sectors VC Index and the CROCI Sectors Index (the “DB Indices”), and will determine whether there has been a market disruption event and/or a force majeure event, as applicable, with respect to the DB Indices. In the event of any such market disruption event or force majeure event, Deutsche Bank may use an alternate method to calculate the closing levels of the DB Indices, as applicable. Deutsche Bank carries out calculations necessary to promulgate the DB Indices and maintains some discretion as to how such calculations are made. In particular, Deutsche Bank has discretion in selecting among methods of how to calculate the DB Indices in the event the regular means of determining the DB Indices are unavailable at the time a determination is scheduled to take place. There can be no assurance that any determinations made by Deutsche Bank in these various capacities will not affect the levels of the DB Indices. Any of these actions could adversely affect the value of financial products based on the CROCI Sectors VC Index or the CROCI Sectors Index. Deutsche Bank has no obligation to consider the interests of holders of financial products based on the CROCI Sectors VC Index or the CROCI Sectors Index in calculating or revising the DB Indices.

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