6 November 2009 | 10 pages

Deutsche Telekom AG (DT)

ADR ☑
Target price change ☑
Estimate change ☑

Risks Remain, Margins Gain

- **Forecast Upgrades –** We upgrade 2009E EPADR by 4.7%, 3.8% 2010E. This was driven by increased margins in Germany and Europe partly offset by downgrades for the USA and OTE. We are raising our target price by 4% in-line with our earnings estimates. We are not factoring in major improvement in the UK, which is a possible source of consensus upgrades in 2010.
- **Why We are Buyers –** On November 5 we raised DT to a Buy. While significant risks remain for DT in the U.S., this is largely reflected in the valuation and the market is overcautious on Germany in our view. DT currently trades at a 40% discount on FCF yield to the sector average. Operationally DT has shown the ability to grow owned cash flow, without NPV- cuts to capex, despite top line pressure. The USA still struggles, but we believe expectations now leave little downside.
- **Cost Cutting Program Supports Cash Flow Growth –** DT's process with cost cutting in Germany and Europe will always be a case of two steps forward, one step back. However DT is one of several incumbents who support our view that in recession costs cut are largely passed to shareholders, not to customers. Management were confident that the S4S program can be extended.
- **Expectations Reasonable and Surprises Possible –** The problems in the USA have been widely flagged and negative net adds confirm this. Q4 should see a strong FX headwind. DT's roadmap to turnaround operations needs good execution. In Germany the 2 year contract expirations is not a perpetuity problem and strong TV net adds are a hint that battle with cable will not be one-way.

Buy/Medium Risk	**1M**
Price (06 Nov 09)	US$14.01
Target price	US$15.89
Expected share price return	13.4%
Expected dividend yield	8.4%
Expected total return	**21.8%**
ADRs Outstanding	4,359M
ADR/Ord Ratio	1:1
Local Share Price	€9.39
Market Cap	US$60,809M

Terence Sinclair
+44-20-7986-4204
terence.sinclair@citi.com

Laurie Fitzjohn-Sykes
laurie.fitzjohnsykes@citi.com

Year to 31 Dec	2007A	2008A	2009E	2010E	2011E
Sales ($m)	85,701	90,728	90,630	96,074	96,705
EBITDA ($m)	26,493	28,630	28,705	30,521	30,749
Net Income ($m)	4,117	5,041	4,076	4,498	4,783
EPADR ($)	0.95	1.16	0.93	1.03	1.10
EPADR (Old) ($)	0.95	1.16	0.89	1.00	1.05
PE (x)	14.77	12.06	14.99	13.59	12.77
EV/EBITDA (x)	4.9	4.5	4.6	4.4	4.2
Dividend/ADR ($)	1.07	1.15	1.13	1.24	1.32
Dividend Yield (%)	7.6	8.2	8.1	8.8	9.4
FX Used EUR	1.37	1.47	1.40	1.48	1.48

See Appendix A-1 for Analyst Certification and important disclosures.

What We Learnt…

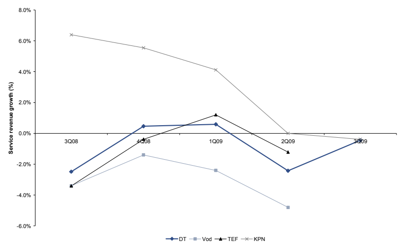
After strong 3Q09 results and conference call we summarise what we learnt. In general the negatives were expected, T-Mobile USA deterioration and increased fixed line churn. While the positives were a delta to expectations, growth in T-Mobile Germany, Domestic and European margin improvement.

1) German Mobile Back to Growth (+ve/unexpected)

German Mobile returned to growth, total revenue growth 1.4% YoY v.s. -3.8% 2Q09. While part of this was driven by a significant step-up in equipment revenues, there was also a marked improvement in service revenue growth to -0.4%, from -2.4% 2Q09.

A significant driver of this was mobile data, non-voice revenues jumped to 27% from 25% 2Q09. The iPhone aided this with 279k net adds 3Q09 taking the total number of iPhone customers to 1.2m. iPhone users have an average ARPU of $108, boosting overall contract ARPU by $1.46.

Figure 1. German Mobile Service Revenue Growth



Source: Company Reports, CIRA

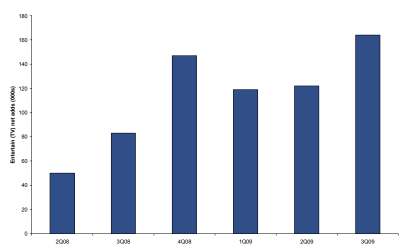
2) Cost Cutting Drives Domestic Margins (+ve/unexpected)

The S4S cost cutting program helped increase domestic margins +1.3ppt QoQ, with EBITDA +6.7% v.s. CIRA, 4.2% vs consensus. $7.90 billion of cost savings have been achieved and DT is rolling out this program to all operations. The ability of telecoms companies to beat expectations on cost cutting has been a trend for 3Q09 results. Management was clear this was not a one off program and expects future savings to aid margins.

3) Strong TV Net Adds (+ve/expected)

DT achieved its strongest ever TV (Entertain) net adds 164k. This was boosted by the re-launch of its Bundesliga package, Liga Total. Competition with cable operators is intensifying. It gives us confidence that DT is increasingly successful at attacking cable's core market. We believe this will be a growing trend compensating for line loss to cable.

Figure 2. TV Net Adds



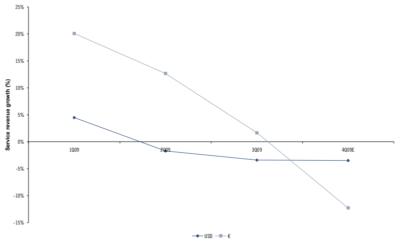
Source: Company Reports, CIRA

4) End of 2-year Contracts, Fixed Line Churn Rises (-ve/expected)

As expected the end of 2 year contracts led to a significant step up in fixed line churn. Broadband net adds fell to 72k versus 245k 2Q09. This brought DT's share of net adds down to 18%. However management remains confident they can reach the 45% FY target. They stated that September had already seen a return to a 45% run-rate. Line loss increased to 573k from 473k 2Q09, which as with broadband appears to be a temporary effect from the 2 year contracts.

While this was a temporary effect and management remains confident in full year targets, the strength of cable competition continues to grow. We believe this risk is reduced by DT's ability to gain TV market share from cable.

Figure 3. T-Mobile USA Service Revenue Growth



Source: Company Reports, CIRA

5) Weak USA Mobile (-ve/expected)

The problems at T-Mobile USA had been widely flagged before the results. Service revenue growth deteriorated to -3.4% from -1.7% 2Q09. Net adds -77k versus +325k 2Q09. Management said AT&T's launch of the new iPhone in June had a significant impact, contract churn rose to 2.4% from 1.9% 2Q09. DT emphasised they have a clear roadmap to turn this business around, the ability to execute this plan will be a key catalyst for the ADR in our view.

The recent price cuts by DT form a key element of the turnaround roadmap. The SIM-only contracts are unique, offering 15-40% discounts to existing tariffs. DT is investing strongly in its 3G network to prevent service outages which we have seen recently. Lastly distribution is being revamped with new stores and partnerships. The situation is challenging, but expectations are low leaving risk evenly balanced.

We also note that the FX headwind should have the greatest effect in Q4. We forecast -3.5% Q4 service revenue growth in USD, the same as Q3. The FX headwind reduces this to -12.3% service revenue growth in €.

6) In Market Consolidation Delivers (+ve/unexpected)

Netherlands margin increased 8.0ppt YoY as benefits of the merger with Orange in 2007 delivered results. Management spoke confidently that savings had been achieved on plan. This is a positive signal for what might be possible for the JV with Orange in the UK, for which a turnaround would be a clear delta to expectations.

7) Working Capital Management Delivered (+ve/unexpected)

DT had guided working capital improvement in H209, however the size of the benefit was unexpected. 3Q09 FCF $4.68 billion +36% v.s. consensus, largely driven by working capital. Management was clear that this was not a one off, but rather the start of optimising DTs working capital management. The cause for this change was DT hiring a new team to focus on this after listening to investor concerns.

8) We Did Not Learn About 2010 Guidance (neutral)

Management did not provide any guidance for 2010 despite a number of questions on the conference call. The reason for this was low visibility into 2010 due to four outstanding risks. 1) FX headwinds for T-Mobile USA. 2) Uncertain economic recovery in Eastern Europe. 3) The potential rise in unemployment in Germany. 4) Late cyclical impact on the System Solutions business.

Forecast Changes

We increase our 2009 EPADR forecast by 4.7%, then by 3.8% 2010, 4.6% 2011. Figure 4 lays out the changes in detail.

OTE has a distorting effect because it is 100% consolidated above net income, while only 30% consolidated for net income. After 3Q09 results we reduced our OTE forecasts by -1.5% 2010 EBITDA, -17% 2010 EPADR. See note *'The 2010 Comeback'* for more details.

The main constituents of our changes are:

Revenues: -0.3% 2009E, +0.1% 2010E

- **Germany:** We raised our revenue forecast for Germany by 0.7% for 2009 and beyond due to the return to growth in German mobile.
- **USA:** Due to the weak performance in Q3 we reduce our 2009 revenue forecast by -0.9%.
- **SEE:** This was offset by a reduction in our OTE forecast reducing of SEE forecast by -0.2% in 2009, -1.4% 2010.
- **System Solutions:** We reduced our 2009 Systems Solutions forecast by -2.6% due to continued macro pressure.

EBITDA: +0.2% 2009E, +0.6% 2010E

We upgraded EBITDA due to increases in German and Europe margins, partially offset by reductions to OTE forecasts.

- **Germany:** We leave our 2009 German margin estimate unchanged. We raise our 2010E German EBITDA margin by +0.6ppt, which combined with the revenue upgrade increases our EBITDA forecast by 2.4% 2010, 3.2% 2011. This was driven by the benefits of the S4S cost cutting program in both fixed and mobile.
- **USA:** We reduce our 2009 margin forecast by -0.5ppt to account for the increased spending to stop the customer loss and the launch of the new price plans.
- **Europe:** After a strong 3Q09 we upgrade our 2009E EBITDA margin by +2.2ppt, 1.4ppt 2010E and beyond. This increases our EBITDA forecast by 9.1% 2009, 5.4% 2010 and beyond.
- **SEE:** Our downgrade to OTE forecasts reduces SEE EBITDA by -0.8% 2009, with high reductions in 2010 and beyond as the lower margin impacts the full year. EBITDA -2.3% 2011E, -3.1% 2012E.

Other Items

- **Below EBITDA:** We increase our depreciation forecast due to higher depreciation at OTE. However the main change below EBITDA is the reduction in minority interests due to a lower net income forecast at OTE. We reduce our minority interests forecast by around 12% each year.
- **German Spectrum:** We add an additional $1.46 billion to our 2010 capex forecast for the German spectrum auctions. This reduces our 2010 FCF forecast by around 15%.

- **Upgrade to FCF:** Excluding the German spectrum auction we increase our FCF forecast by around 4.5% in 2009 and beyond. Our 2009 forecast is $9.78 billion in line with guidance.

Figure 4. Forecast Changes

	New Forecasts			Change (%)		
	2009E	2010E	2011E	2009E	2010E	2011E
Germany	33,519	34,342	33,467	0.7%	0.7%	0.7%
USA	21,887	23,483	24,357	-0.9%	0.0%	0.0%
Europe	13,391	14,213	14,397	0.0%	0.0%	0.0%
Southern and Eastern Europe	13,102	14,465	14,528	-0.2%	-1.4%	-1.5%
Systems Solutions	8,451	9,285	9,657	-2.6%	0.0%	0.0%
Group HQ	279	285	297	0.0%	0.0%	0.0%
Total Revenues	**90,630**	**96,074**	**96,705**	**-0.3%**	**0.1%**	**0.1%**
Germany	13,328	13,577	13,292	0.8%	2.4%	3.2%
- margin (%)	39.8%	39.5%	39.7%	0.0ppt	0.6ppt	1.0ppt
USA	6,114	6,879	7,203	-2.6%	0.0%	0.0%
- margin (%)	27.9%	29.3%	29.6%	-0.5ppt	0.0ppt	0.0ppt
Europe	3,511	3,723	3,832	9.1%	5.4%	5.4%
- margin (%)	26.2%	26.2%	26.6%	2.2ppt	1.4ppt	1.4ppt
Southern and Eastern Europe	5,223	5,743	5,813	-0.8%	-2.3%	-3.1%
- margin (%)	39.9%	39.7%	40.0%	-0.2ppt	-0.4ppt	-0.7ppt
Systems Solutions	1,243	1,324	1,335	0.8%	0.0%	0.0%
- margin (%)	14.7%	14.3%	13.8%	0.5ppt	0.0ppt	0.0ppt
Group HQ	(475)	(490)	(490)	21.4%	26.4%	31.5%
Consolidation effects	(237)	(238)	(238)	-5.6%	0.0%	0.0%
Total EBITDA	**28,705**	**30,521**	**30,748**	**0.2%**	**0.6%**	**0.8%**
Margin (%)	31.7%	31.8%	31.8%	0.2ppt	0.1ppt	0.2ppt
Depr & Amor	(16,454)	(17,131)	(17,184)	0.7%	1.2%	1.2%
EBIT	**12,251**	**13,390**	**13,566**	**-0.4%**	**-0.3%**	**0.2%**
Net financial result	(4,589)	(4,484)	(4,067)	-1.8%	-0.3%	-0.3%
Income tax	(2,624)	(3,118)	(3,325)	-0.8%	-0.3%	0.5%
Minority Interests	(962)	(1,292)	(1,390)	-11.4%	-12.3%	-11.5%
Underlying Net Income	**4,076**	**4,498**	**4,783**	**4.7%**	**3.8%**	**4.6%**
EPADR	**0.93**	**1.03**	**1.10**	**4.7%**	**3.8%**	**4.6%**
DPADR	**1.13**	**1.24**	**1.32**	**4.7%**	**3.8%**	**4.6%**
Capex	**12,828**	**13,084**	**12,942**	**-0.3%**	**-0.7%**	**-0.7%**
as a % of sales	-14.2%	-13.6%	-13.4%	0.0%	-0.8%	-0.8%
Net Debt	**57,451**	**56,553**	**51,634**	**0.1%**	**-0.2%**	**-0.6%**
FCF	**9,751**	**9,736**	**10,280**	**4.2%**	**4.6%**	**4.1%**
F/X Used ($/EUR)	**1.40**	**1.48**	**1.48**			

Note: Percentage figures are calculated on local currency numbers not accounted for F/X rate.

Source: Citi Investment Research and Analysis

Deutsche Telekom AG

Company description

Deutsche Telekom is the incumbent telecom operator in Germany. The largest division (T-Com) is made up of the domestic fixed line operations and the acquired incumbent operations in Hungary, Croatia and Slovenia. T-Mobile, the mobile division, has operations in the U.S., UK, Austria, Netherlands and the Czech Republic – although it is a smaller player in these external markets. The company serves multinational corporate clients through its T Systems operations, which is both a telecom supplier and a supplier of IT services. The group has moved from a four pillar structure to a three pillar structure by including T Online with T Com. The German government owns 43% directly and indirectly.

Investment strategy

We rate Deutsche Telekom Buy/Medium Risk (1M). While risks remain for DT the valuation is now compelling with a FCF yield 40% above the sector average and a dividend yield close to 80% above market. Domestic operations and Europe are performing well with strong margins. The USA will continue to struggle, but concerns over this seem over-played given diminishing FX headwinds post 4Q09. T-Mobile USA is only around 23% of EV and margins have not deteriorated. The recent increase in margins gives us confidence that DT is successfully implementing its cost reduction programmes.

Valuation

As for all integrated operators, we use a combination of DCF and market-based multiples in a sum of the parts. For DT we use a WACC of 8%. We use market-based values for all quoted assets and use year-end 2009E net debt. We crosscheck our DCF models with market-based valuation metrics, including free cash flow yield, P/E and EV/EBITDA, to arrive at our fair value. Our $15.89 per ADR target price is set at a 10% discount to fair value to reflect the risk of further bad news in 4Q 2009 (U.S. Mobile, Domestic Fixed) which means fair value is unlikely to be reached in the next 12 months under current market conditions in our view.

Risks

We rate Deutsche Telecom Medium Risk based on our assessment of industry and company-specific risk factors. There are industry-specific risks to achieving our target price for all telecom companies. These include concerns about over-capitalisation, weak demand, regulatory risks and the risk of new technology establishing cost advantages over current technology. For DT, these risks are compounded by the dependence on the domestic cash flow and by the risk of competing against larger operators in the U.S.. The government remains a significant shareholder and will probably look to continue reducing its shareholding. If the impact on the company from any of these factors proves to be greater than we anticipate, the ADR will likely have difficulty achieving our financial and price targets. Likewise, if any of these factors proves to have less of an effect than we anticipate, the ADR could materially outperform our target.

Appendix A-1

Analyst Certification

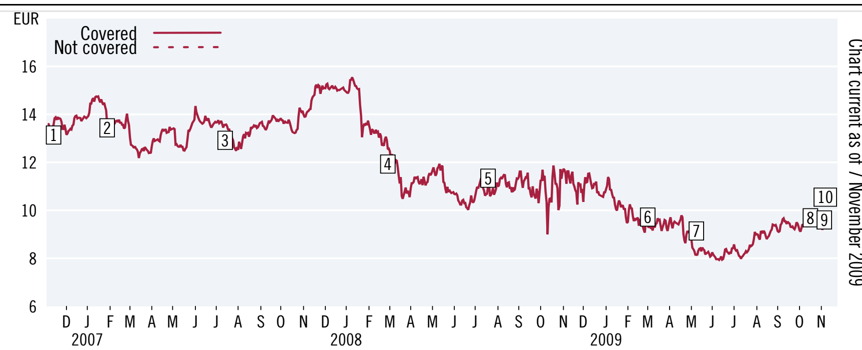
Each research analyst(s) primarily responsible for the preparation and content of all or any identified portion of this research report hereby certifies that, with respect to each issuer or security or any identified portion of the report with respect to an issuer or security that the research analyst covers in this research report, all of the views expressed in this research report accurately reflect their personal views about those issuer(s) or securities. Each research analyst(s) also certify that no part of their compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this research report.

IMPORTANT DISCLOSURES

Deutsche Telekom AG (DTEGn.DE)

Ratings and Target Price History
Fundamental Research

Analyst: Terence Sinclair
Covered since July 15 2009



	Date	Rating	Target Price	Closing Price
1	14-Nov-06	2H	*13.50	13.57
2	29-Jan-07	*3H	*12.50	13.60
3	13-Jul-07	*3M	12.50	13.57
4	28-Feb-08	*2M	*13.00	12.54
5	18-Jul-08	2M	*11.50	11.01
6	2-Mar-09	2M	*10.00	9.38
7	8-May-09	2M	*8.20	8.14
8	16-Oct-09	2M	*10.30	9.40
9	5-Nov-09	*1M	10.30	9.50
10	6-Nov-09	1M	*10.70	9.45

* Indicates change

Rating/target price changes above reflect Eastern Standard Time

Citigroup Global Markets Inc. or its affiliates beneficially owns 1% or more of any class of common equity securities of Deutsche Telekom AG. This position reflects information available as of the prior business day.

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of Deutsche Telekom AG.

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from Deutsche Telekom AG.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from Deutsche Telekom AG in the past 12 months.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as investment banking client(s): Deutsche Telekom AG.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, securities-related: Deutsche Telekom AG.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, non-securities-related: Deutsche Telekom AG.

Rohini Malkani has in the past worked with the India government or its divisions in her personal capacity.

Analysts' compensation is determined based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates ("the Firm"). Like all Firm employees, analysts receive compensation that is impacted by overall firm profitability which includes investment banking revenues.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Investment Research & Analysis product ("the Product"), please contact Citi Investment Research & Analysis, 388 Greenwich Street, 29th Floor, New York, NY, 10013, Attention: Legal/Compliance. In addition, the same important disclosures, with the exception of the Valuation and Risk assessments and historical disclosures, are contained on the Firm's disclosure website at www.citigroupgeo.com. Valuation and Risk assessments can be found in the text of the most recent research note/report regarding the subject company. Historical disclosures (for up to the past three years) will be provided upon request.

Citi Investment Research & Analysis Ratings Distribution

Data current as of 30 Sep 2009	**Buy**	**Hold**	**Sell**
Citi Investment Research & Analysis Global Fundamental Coverage	44%	38%	18%
% of companies in each rating category that are investment banking clients	47%	45%	36%

Guide to Citi Investment Research & Analysis (CIRA) Fundamental Research Investment Ratings:
CIRA's stock recommendations include a risk rating and an investment rating.
Risk ratings, which take into account both price volatility and fundamental criteria, are: Low (L), Medium (M), High (H), and Speculative (S).
Investment ratings are a function of CIRA's expectation of total return (forecast price appreciation and dividend yield within the next 12 months) and risk rating.

For securities in developed markets (US, UK, Europe, Japan, and Australia/New Zealand), investment ratings are:Buy (1) (expected total return of 10% or more for Low-Risk stocks, 15% or more for Medium-Risk stocks, 20% or more for High-Risk stocks, and 35% or more for Speculative stocks); Hold (2) (0%-10% for Low-Risk stocks, 0%-15% for Medium-Risk stocks, 0%-20% for High-Risk stocks, and 0%-35% for Speculative stocks); and Sell (3) (negative total return).

Investment ratings are determined by the ranges described above at the time of initiation of coverage, a change in investment and/or risk rating, or a change in target price (subject to limited management discretion). At other times, the expected total returns may fall outside of these ranges because of market price movements and/or other short-term volatility or trading patterns. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. Your decision to buy or sell a security should be based upon your personal investment objectives and should be made only after evaluating the stock's expected performance and risk.

Guide to Citi Investment Research & Analysis (CIRA) Corporate Bond Research Credit Opinions and Investment Ratings: CIRA's corporate bond research issuer publications include a fundamental credit opinion of Improving, Stable or Deteriorating and a complementary risk rating of Low (L), Medium (M), High (H) or Speculative (S) regarding the credit risk of the company featured in the report. The fundamental credit opinion reflects the CIRA analyst's opinion of the direction of credit fundamentals of the issuer without respect to securities market vagaries. The fundamental credit opinion is not geared to, but should be viewed in the context of debt ratings issued by major public debt ratings companies such as Moody's Investors Service, Standard and Poor's, and Fitch Ratings. CBR risk ratings are approximately equivalent to the following matrix: Low Risk Triple A to Low Double A; Low to Medium Risk High Single A through High Triple B; Medium to High Risk Mid Triple B through High Double B; High to Speculative Risk Mid Double B and Below. The risk rating element illustrates the analyst's opinion of the relative likelihood of loss of principal when a fixed income security issued by a company is held to maturity, based upon both fundamental and market risk factors. Certain reports published by CIRA will also include investment ratings on specific issues of companies under coverage which have been assigned fundamental credit opinions and risk ratings. Investment ratings are a function of CIRA's expectations for total return, relative return (to publicly available Citigroup bond indices performance), and risk rating. These investment ratings are: Buy/Overweight the bond is expected to outperform the relevant Citigroup bond market sector index (Broad Investment Grade, High Yield Market or Emerging Market), performances of which are updated monthly and can be viewed at http://sd.ny.ssmb.com/ using the "Indexes" tab; Hold/Neutral Weight the bond is expected to perform in line with the relevant Citigroup bond market sector index; or Sell/Underweight the bond is expected to underperform the relevant sector of the Citigroup indexes.

Non-US research analysts who have prepared this report are not registered/qualified as research analysts with the NYSE and/or NASD. Such research analysts may not be associated persons of the member organization and therefore may not be subject to the NYSE Rule 472 and NASD Rule 2711 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. The legal entities employing the authors of this report are listed below:

Citigroup Global Markets Ltd	Terence Sinclair,Laurie Fitzjohn-Sykes

OTHER DISCLOSURES

Citigroup Global Markets Inc. and/or its affiliates has a significant financial interest in relation to Deutsche Telekom AG. (For an explanation of the determination of significant financial interest, please refer to the policy for managing conflicts of interest which can be found at www.citigroupgeo.com.)

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the issuer(s) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Investment Research & Analysis (CIRA) does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of CIRA to provide research coverage of the/those issuer(s) mentioned therein, including in response to news affecting this issuer, subject to applicable quiet periods and capacity constraints. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

Important Disclosures for Morgan Stanley Smith Barney LLC Customers: Morgan Stanley & Co. Incorporated (Morgan Stanley) research reports may be available about the companies that are the subject of this Citi Investment Research & Analysis (CIRA) research report. Ask your Financial Advisor or use smithbarney.com to view any available Morgan Stanley research reports in addition to CIRA research reports.

Important disclosure regarding the relationship between the companies that are the subject of this CIRA research report and Morgan Stanley Smith Barney LLC and its affiliates are available at the Morgan Stanley Smith Barney disclosure website at www.morganstanleysmithbarney.com/researchdisclosures.

The required disclosures provided by Morgan Stanley and Citigroup Global Markets, Inc. on Morgan Stanley and CIRA research relate in part to the separate businesses of Citigroup Global Markets, Inc. and Morgan Stanley that now form Morgan Stanley Smith Barney LLC, rather than to Morgan Stanley Smith Barney LLC in its entirety. For Morgan Stanley and Citigroup Global Markets, Inc. specific disclosures, you may refer to www.morganstanley.com/researchdisclosures and

https://www.citigroupgeo.com/geopublic/Disclosures/index_a.html.
This CIRA research report has been reviewed and approved on behalf of Morgan Stanley Smith Barney LLC. This review and approval was conducted by the same person who reviewed this research report on behalf of CIRA. This could create a conflict of interest.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in Australia through Citigroup Global Markets Australia Pty Ltd. (ABN 64 003 114 832 and AFSL No. 240992), participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in Brazil by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários, BACEN - Brazilian Central Bank, APIMEC - Associação Associação dos Analistas e Profissionais de Investimento do Mercado de Capitais and ANBID - Associação Nacional dos Bancos de Investimento. Av. Paulista, 1111 - 11º andar - CEP. 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of Canada by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. The Product is made available in France by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 1-5 Rue Paul Cézanne, 8ème, Paris, France. The Product may not be distributed to private clients in Germany. The Product is distributed in Germany by Citigroup Global Markets Deutschland AG & Co. KGaA, which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). Frankfurt am Main, Reuterweg 16, 60323 Frankfurt am Main. If the Product is made available in Hong Kong by, or on behalf of, Citigroup Global Markets Asia Ltd., it is attributable to Citigroup Global Markets Asia Ltd., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Product is made available in Hong Kong by The Citigroup Private Bank to its clients, it is attributable to Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. The Citigroup Private Bank and Citibank N.A. is regulated by the Hong Kong Monetary Authority. The Product is made available in India by Citigroup Global Markets India Private Limited, which is regulated by Securities and Exchange Board of India. Bakhtawar, Nariman Point, Mumbai 400-021. The Product is made available in Indonesia through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in Italy by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. Foro Buonaparte 16, Milan, 20121, Italy. The Product is made available in Japan by Citigroup Global Markets Japan Inc. ("CGMJ"), which is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Shin-Marunouchi Building, 1-5-1 Marunouchi, Chiyoda-ku, Tokyo 100-6520 Japan. If the Product was distributed by Nikko Cordial Securities Inc. it is being so distributed under license. In the event that an error is found in an CGMJ research report, a revised version will be posted on the Firm's Global Equities Online (GEO) website. If you have questions regarding GEO, please call (81 3) 6270-3019 for help. The Product is made available in Korea by Citigroup Global Markets Korea Securities Ltd., which is regulated by Financial Supervisory Commission and the Financial Supervisory Service. Hungkuk Life Insurance Building, 226 Shinmunno 1-GA, Jongno-Gu, Seoul, 110-061. The Product is made available in Malaysia by Citigroup Global Markets Malaysia Sdn Bhd, which is regulated by Malaysia Securities Commission. Menara Citibank, 165 Jalan Ampang, Kuala Lumpur, 50450. The Product is made available in Mexico by Acciones y Valores Banamex, S.A. De C. V., Casa de Bolsa, Integrante del Grupo Financiero Banamex ("Accival") which is a wholly owned subsidiary of Citigroup Inc. and is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In New Zealand the Product is made available through Citigroup Global Markets New Zealand Ltd. (Company Number 604457), a Participant of the New Zealand Exchange Limited and regulated by the New Zealand Securities Commission. Level 19, Mobile on the Park, 157 Lambton Quay, Wellington. The Product is made available in Pakistan by Citibank N.A. Pakistan branch, which is regulated by the State Bank of Pakistan and Securities Exchange Commission, Pakistan. AWT Plaza, 1.1. Chundrigar Road, P.O. Box 4889, Karachi-74200. The Product is made available in Poland by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Nadzoru Finansowego. Dom Maklerski Banku Handlowego S.A. ul. Chalubinskiego 8, 00-630 Warszawa. The Product is made available in the Russian Federation through ZAO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in Singapore through Citigroup Global Markets Singapore Pte. Ltd., a Capital Markets Services Licence holder, and regulated by Monetary Authority of Singapore. 1 Temasek Avenue, #39-02 Millenia Tower, Singapore 039192. The Product is made available by The Citigroup Private Bank in Singapore through Citibank, N.A., Singapore branch, a licensed bank in Singapore that is regulated by Monetary Authority of Singapore. Citigroup Global Markets (Pty) Ltd. is incorporated in the Republic of South Africa (company registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in Spain by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 29 Jose Ortega Y Gassef, 4th Floor, Madrid, 28006, Spain. The Product is made available in Taiwan through Citigroup Global Markets Taiwan Securities Company Ltd., which is regulated by Securities & Futures Bureau. No portion of the report may be reproduced or quoted in Taiwan by the press or any other person. No. 8 Manhattan Building, Hsin Yi Road, Section 5, Taipei 100, Taiwan. The Product is made available in Thailand through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 18/F, 22/F and 29/F, 82 North Sathorn Road, Silom, Bangrak, Bangkok 10500, Thailand. The Product is made available in Turkey through Citibank AS which is regulated by Capital Markets Board. Tekfen Tower, Eski Buyukdere Caddesi # 209 Kat 2B, 23294 Levent, Istanbul, Turkey. In the U.A.E, these materials (the "Materials") are communicated by Citigroup Global Markets Limited, DIFC branch ("CGML"), an entity registered in the Dubai International Financial Center ("DIFC") and licensed and regulated by the Dubai Financial Services Authority ("DFSA" to Professional Clients and Market Counterparties only and should not be relied upon or distributed to Retail Clients. A distribution of the different CIRA ratings distribution, in percentage terms for Investments in each sector covered is made available on request. Financial products and/or services to which the Materials relate will only be made available to Professional Clients and Market Counterparties. The Product is made available in United Kingdom by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. This material may relate to investments or services of a person outside of the UK or to other matters which are not regulated by the FSA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in United States by Citigroup Global Markets Inc, which is regulated by NASD, NYSE and the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is regulated by Financial Services Authority. Many European regulators require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to CIRA's Products can be found at www.citigroupgeo.com. Compensation of equity research analysts is determined by equity research management and Citigroup's senior management and is not linked to specific transactions or recommendations. The Product may have been distributed simultaneously, in multiple formats, to the Firm's worldwide institutional and retail customers. The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would not be permitted. Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. The Product does not purport to identify the nature of the specific market or other risks associated with a particular transaction. Advice in the Product is general and should not be construed as personal advice given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. Prior to acquiring any financial product, it is the client's responsibility to obtain the relevant offer document for the product and consider it before making a decision as to whether to purchase the product.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST