

Research  
Deutsche Bank  
TheHouseView  
Special

Deutsche Bank Research  
Fed: Taking the plunge  
9 December 2015

DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MCI(P)  
124/04/2015

## TheHouseView Special – Fed: Taking the plunge

Markets entered the year with expectations for the Fed to raise rates.

Several shocks that stayed the Fed's

hand in June and then September have now largely dissipated. There is now broad-based consensus that the

Fed will take the plunge at its 16 December meeting and raise rates for the first time since 2006.

Despite this consensus, there are lingering concerns that this shift in policy is a mistake. We disagree: the

economy is strong enough to withstand higher rates.

With the quasi-certainty of a hike this month, focus shifts to the Fed outlook beyond lift-off. How quickly will

rates rise? How high will rates go?

We expect the Fed to raise rates gradually in 2016 as it assesses the economy's reaction to this policy

tightening, with the pace of hikes accelerating thereafter as the forces for going slow fade. The market is pricing

a much more gradual ascent in rates; this disconnect should be resolved after a few hikes, with the market

converging toward the Fed's projections. Further out, rates should peak lower than in the past but very likely

higher than current market expectations.

Within 2016 the Fed may hike more in the first half than the second half.

From a macro point of view, inflation is

likely to start slowing around mid-year. From a markets perspective, the repricing of the Fed's rate path could

lead to a tightening of financial conditions – this is especially true if the Fed decides to taper its reinvestment

policy. These factors combined could lead the Fed to pause briefly in the second half of the year.

Given the widespread agreement that the Fed will hike, a strong initial market reaction is unlikely. Beyond the

first hike, the outlook for risk assets will be determined by how the disagreement between the market and the

Fed about the pace and extent of hikes gets resolved. Risk assets should be resilient in 2016 if this repricing is

gradual and orderly.

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The reasons that kept the Fed put in September and October have now largely dissipated

Lower US growth

Tighter financial conditions

Lower global growth

Ahead of September / October FOMCs

|| Hike not priced by market – risk of financial tightening (stronger dollar, higher rates)

|| High financial markets volatility

|| Fears of sharp slowdown in China

|| Concerns over US and eurozone growth, despite solid macro data  
Dollar strength

|| Concern given 20% rise since mid-2014

|| Rate hike would have led to further strength

Lower commodity prices

Remaining slack in labour market

Lower US inflation

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|| Sharp sell-off in commodities since May2015, including nearly 30% drop in oil

|| Worry that it reflects global growth weakness

|| Some slowdown in labour market

|| Little evidence of wage inflation  
Current conditions

|| Market almost fully pricing a hike

|| Volatility has abated

|| Buy into stabilisation and gradual, not sharp, slowdown in China

|| Less concern about downside risks in US and eurozone

|| Further strength but largely driven  
by hike expectations

|| Less a concern following ECBdriven  
euro rally\*

|| Weakness continues – though less  
tied to global growth concerns

|| Strong rebound in labour market  
and pick-up in wage inflation –  
confirming diminishing slack

} Largely dissipated ~ Partly dissipated } Still a concern

}

}

Note: (\*) ECB delivered less than market expectations on 3-December, leading  
to a 2%+

surge in the euro vs. the dollar

3

}

}

~

As a result, the Fed is widely expected to raise rates for the first time since 2006 at its 16 December meeting

Everyone expects a Fed hike in December

1 Fed officials

"When the Committee begins to normalize the stance of policy...it is a day that I expect we all are looking forward to."

Janet Yellen, Fed Chair, 3 December

"Assuming that we continue to get good data on the economy... there's a strong case to be made in December to raise rates."

John Williams, San Francisco Fed President, 21 November

"It is quite possible that the conditions (...) to begin to normalize monetary policy could soon be satisfied."

Bill Dudley, New York Fed President, 12 November

"I'm comfortable with moving off zero soon."

Dennis Lockhart, Atlanta Fed President, 19 November

3 Economists

0%

20%

40%

60%

80%

100%

% of economists

Financial Review, Nov 10th 2015

2 Market

Probability of a hike by December\*

100 %

20

40

60

80

0

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Note (\*): It is likely that a 25bp hike by the Fed raises the Fed funds rate by less than 25bp, given excess

liquidity in the system. The lower (upper) bound of range assumes Fed funds rate rises by 25bps (20bps)

when the Fed hikes rates. Source: Bloomberg Finance LP, Deutsche Bank Research

Sep FOMC Oct payrolls

97%

78%

August selloff

in risk

priced\*

Oct

FOMC

4 Other officials and prominent investors

WSJ, Oct 11th 2015

Sep. FOMC

Source: Bloomberg Finance LP, Deutsche Bank Research

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Dec. FOMC  
No hike  
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Bloomberg, Nov 6th 2015  
Hike  
4

We disagree with the view that hiking is a policy mistake: the economy is strong enough to withstand higher rates  
Fed does not want to hike too early and risk having to reverse course as other major central banks have done

%, policy rate

ECB

-2

0

2

4

6

8

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015

Source: ECB, SRB, NB, RBA, Haver Analytics, Deutsche Bank Research

Rising real wages incentivise firms to invest, leading to higher productivity growth; we should see this in the coming years

%yoy

0

1

2

3

4

5

1985

Productivity growth (3y moving avg, ls)

Real wage growth (2y lead, rs)

Riksbank

Norges Bank

RBA

We disagree with many arguments against hiking rates – and gradual hikes in any case reduce the chance of a policy error

Argument

strength

Argument for

policy mistake

Fed lacks the

tools to ease

policy

Financial

conditions have

already tightened

No inflation

pressures

%yoy

-0.5

0.0

0.5

1.0

1.5

2.0

2.5

3.0  
1990  
1995  
2000  
2005  
2010  
2015

Notes: productivity growth is real output per hour in the non-farm business sector; real wage growth is

employment cost index compensation minus core PCE inflation

Source: BLS, BEA, Haver Analytics, Deutsche Bank Research  
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Global growth is

too weak

Economy is too

weak for hikes

Productivity

growth is low

Weak

Strong

5

Note: (\*) The sum of personal consumption, residential investment and non-residential fixed investment.

Our view

Valid point for raising rates gradually

Last months' tightening equal 1-2 hikes

Tightening is precisely Fed's intention

Temporary factors keeping inflation low

Should rise toward target as they abate

Global growth is slow – but expect moderate pick up in next two years

Exports only 1/8th of GDP

Private domestic demand\* growing at same pace as pre-crisis

Robust employment growth continues

Low productivity growth means a faster tightening of the labour market

|| Should rise modestly as wages pick up

With the quasi-certainty of a hike this month, focus shifts to how quickly and how high rates will go  
Focus following the first hike  
Market pricing of Fed hikes is materially lower than the Fed's projections of a gradual pace of hikes  
Fed funds, %  
Near term  
Mediumterm

What pace of hikes?

What are the key drivers?

Is the market pricing this?

Terminal  
rate\*

How high will  
rates go this  
cycle?

Is the market  
pricing this?

Fed signals 220bp of hikes in  
2016-17, 80bp less than in  
previous cycles – yet double  
market pricing

0.0

0.5

1.0

1.5

2.0

2.5

3.0

3.5

Dec-14

Hikes (bp)

Market

Fed

Previous cycles

Note: (\*) Peak Fed funds rate in a hiking cycle

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Previous cycles

Fed

Sep-FOMC

Market

Lift-off

Dec-15

2016

60

100

200

Dec-16

2017

50

120

100

Source: Fed, Bloomberg Finance LP, Deutsche Bank Research

Low long rates could induce faster Fed rate hikes-12 November 2015

World Outlook: Managing with less liquidity-8 December 2015

6

Dec-17

2018

n/a

80

n/a

Dec-18

As a result, most focus on 16 December beyond the hike decision will be on clues for what to expect next from the Fed  
How to read the Fed FOMC meeting on 16 December

#### 1 The statement

- Assessment of US economy

- Guidance on future policy

  - Pace of hikes

  - Reinvestment policy\*

- Discussion of risks, e.g., global growth, oil prices, dollar

- Last sentence of statement, i.e., signal that policy will remain accommodative

- Any dissents to statement

#### 3 Dots plot (individual members' projections of Fed funds rate)

- Only marginal downward revisions expected

- Long-run median may come down – leading to lower dots trajectory

#### 4 Chair Yellen press conference

- Overall tone

- Conditions that Fed needs to see to continue hiking

- What would lead the Fed to pause or stop hiking

- Guidance on reinvestment policy\* and interplay between rates and reinvestments

Note: (\*) Currently, the Fed reinvests its maturing holdings of MBS and Treasuries purchased during QE.

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#### 2 Economic projections

- Little change expected

- Some scope for lowering:

-Inflation forecast: dovish,  
signals gradual pace  
-Unemployment forecast:  
hawkish

We expect the Fed to raise rates gradually in 2016, before moving to faster hikes as the forces for going slow fade...

Main drivers for the Fed

Impact on US

Sign

Global

growth

Labour

market

strength

Dollar

strength

Low oil

prices

Higher

rates

|| Moderate pace

|| Marginal pick-up in 2016 and 2017

|| At full employment, to tighten more

|| Wage inflation low but rising

|| +25% since mid2014

Further strength, at slower pace

|| -50% in 2014, -25% in 2015

-  
|| Limited further downside in 2016

|| Potential for sharp rise if market prices  
Fed path in 2016

n.a.

-

-

+

-

Impact

H High

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L Low

-

+

-

+

H

M

H

H

in H1

Other

M

L

Pace of  
hikes

|| Fed committed to  
gradual hikes

|| Slow tightening to  
avoid recession\*\*

|| After a few hikes,  
arguments for  
continuing slow less  
compelling

Slow and gradual

More rapid, to  
ward-off inflation

8

Notes: (\*) Theoretical policy rate that keeps economy at full employment and  
inflation on target. A

higher neutral rate requires more hikes in the same period of time. (\*\*) At

zero rates, easing options

are more limited, so the Fed needs to be more cautious as it raises rates.

Size

Inflation Growth 2016 After

L

H

Neutral  
rate\*

L

Financial  
conditions

L

|| Tightening given

dollar strength, higher  
rates

|| Tightening continues  
but at lower rate  
Inflation  
2016

|| Firming in H1 but  
downside risks in H2

|| Kept low by growth  
headwinds, low  
potential growth  
After

|| More clearly rising  
toward Fed target

|| Higher as headwinds  
fade, productivity  
growth rises  
Fed's assessment of pace of hikes

... though slowing inflation and a tightening of financial conditions as the market re-prices the Fed may pause hikes in H2-2016

2016

Q1

Expectations

|| Inflation to firm-up

|| Limited adverse impact from first hike on growth

|| Labour market continues to tighten

Q2

|| Inflation to stabilise, potentially recede

|| Growth and labour market to remain on track

Q3

Q4

|| Growth should remain broadly stable

|| Continued gains in labour market, with unemployment falling further than Fed expects

|| Inflation likely to drop modestly in H2

|| Tightening of financial conditions likely as market starts to re-price Fed path

|| Gradual pace to assess impact of hikes on markets, economy

Implications

for

the Fed

|| Remain data dependent

|| Rate hikes likely in March, June

|| Consider tapering the reinvestment of its securities holdings\*

|| Expect one hike in the second half, with scope for skipping a quarter before resuming hikes

Note: (\*) Currently, the Fed reinvests its maturing holdings of MBS and

Treasuries purchased during QE.

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This is especially true if the Fed decides to taper its reinvestment policy and this leads to a tightening of financial conditions

|| The Fed is currently reinvesting proceeds from its maturing securities keeping its balance sheet stable

|| Altering this reinvestment policy would equate to a monetary policy tightening

- Fed can stop, or more likely taper reinvestments
- Opposite effect to QE, i.e., higher long-term rates

|| As such, the decision and the tightening of financial conditions it would bring about may affect the Fed's assessment of the pace of rate hikes

- At \$300-500bn per year through 2019, the amount of maturing securities is considerable

|| The Fed has so far given little guidance on when or how this will happen

- Fed would like to be confident that economy is weathering rate hikes well

|| We expect Fed to begin reducing its reinvestment some time in the second half of 2016

The size of the Fed's balance sheet is currently kept constant via the reinvestment of maturing assets

\$tn

0

1

2

3

4

5

Source: Haver Analytics, Deutsche Bank Research

MBS

Other

Treasuries

A wave of maturities from the Fed's portfolio could put upward pressure on long-term rates when the Fed stops reinvesting

\$bn

Fixed income market will have

200

400

600

0

2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025

Note: projections based on a speech by the Fed's Stanley Fischer in February 2015

Source: Fischer (2015), FRBNY, Deutsche Bank Research

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to absorb a lot more when Fed

stops reinvestment

Annual maturities (ls)

Cumulative maturities (rs)

\$bn

1,000

2,000

3,000

4,000

0

By 2017 macroeconomic conditions should lead the Fed to hike faster – potentially even faster than current Fed projections

|| The latest Fed projections signal a more gradual pace of hikes than history  
– Fed sees 4-5 hikes in each of the next two years# – compared to 6 hikes in previous cycles

|| While a slow pace of hikes is justified initially, the risk of having to hike faster afterwards is high

|| By 2017 many of the inflation headwinds will have dissipated and inflation should be closer to target  
– Fading impact from dollar strength due to base effects  
– Wage pressure building

|| Unemployment, meanwhile, will have significantly undershot the Fed's estimate of full employment

|| In this context it is difficult to justify going slow, as the risk of inflation overshooting becomes more real

|| We therefore see the risk of an upward adjustment to Fed projections for 2017 hikes

|| It is hard to call the exact timing of this adjustment but it is likely only toward end-2016

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Inflation is expected to rebound from current low levels and approach the Fed's target\*

-0.5

0.0

0.5

1.0

1.5

2.0

2.5

%yoy

Fed's target\*

Headline CPI inflation

Core CPI inflation

2013

2014

2015

2016

2017

Note (\*): The Fed officially targets 2% for headline PCE inflation. This is roughly equivalent to 2.3% for

headline CPI inflation, given that CPI inflation tends to run a few tenths about PCE.

Source: BLS, Haver Analytics, Deutsche Bank Research

Unemployment rate is already at full employment and will continue dropping further

10 %

3

4

5

6

7

8

9

2005

2007

2009

Fed's full employment

estimate (4.9-5.2%)

2011

Source: BLS, Haver Analytics, Deutsche Bank Research

11

Note (#): FOMC committee's leadership (Yellen, Fischer and Dudley) likely expect only 3-4 hikes

2013

2015

2017

The terminal rate will be lower than in the past but very likely higher than current market expectations  
The neutral rate has fallen since the crisis – but the rate implied by market pricing is consistent with a very pessimistic scenario

Neutral rate estimates

3-3.25% 3.25-3.50%

2.00%

Market pricing

Potential

growth

DB

Neutral rate estimates are consistent with:

0.6%

Productivi

-ty growth

0%

1.25%

1.75-2%

Fed

2-2.25%

1.5%

Source: CBO, Laubach and Williams (2003), FOMC, Deutsche Bank Research

Pre-crisis\*

3%

2%

Note: (\*) Avg. 1995-2005

Several of the reasons for a lower terminal rate have faded

Reducing

Rationale

terminal rate?

Fiscal policy

Private

deleveraging

Mortgage credit

conditions

Subdued

global growth

Low potential

growth

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┘

┘

█ Fiscal policy has shifted from a significant drag to neutral

█ Deleveraging slowed significantly; credit

growth picking up

|| Still tight but showing some signs of loosening

|| Global growth, giving less external impulse to US growth

|| Still low but should rise modestly as productivity picks up

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Note (#): FOMC committee's leadership (Yellen, Fischer and Dudley) likely expect only 3-4 hikes

4.50%

|| How high the Fed's policy rate eventually rises (i.e., the terminal rate) is closely tied to the neutral rate  
– A higher neutral rate means the Fed has to raise rates more to tighten financial conditions

|| Estimates suggest the neutral rate is currently very low due to growth headwinds (e.g., fiscal drag, tight credit, slow global growth), lower potential growth

|| Neutral rate should rise as these headwinds fade and potential growth improves...

|| ...But estimates suggest that the long-run neutral rate will remain lower than in the past

– Prior to the crisis the neutral rate was near 4.5%

– Fed's estimate is currently 3.25-3.50%; we think it is somewhat lower (i.e., 3-3.25%)

|| The market pricing of a terminal rate around 2% is consistent with a very pessimistic economic scenario, assuming no rebound in potential growth

|| As the market reprices the pace of hikes, it will also have to raise its view on the terminal rate

We see risk assets resilient to Fed hikes in 2016, unless (until?)  
the market abruptly re-prices the Fed path

Asset class View

Equities

Resilient to Fed hikes

Rates

Long rates to drift  
higher

Partial convergence  
between US, Europe

FX

Credit

EM

Commodities

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Downside but limited

Difficult outlook

Long USD

Short EUR

US under pressure

Rationale

As long as Fed hikes are gradual, long-term yields remain contained and  
dollar gains are slow, all of which we expect, equities should be resilient to Fed  
hikes

Short-term downside only if rates rise sharply

US long-end rates to rise gradually (10-year yield at 2.5% end-2016);  
upside risk as Fed signals reinvestment tapering, market pricing converges to Fed

Europe rates should follow the US higher, especially if an improving  
economy leads the ECB to signal tapering of QE next year

We are passing the peak point of central bank policy divergence (i.e.,  
tightening Fed, loosening ECB) – rates should partially converge ahead

USD upswing to continue, though at a more moderate pace

|| ECB to discourage further appreciation; outflows should continue

|| US credit resilient to moderate Fed hikes, faster tightening would hurt

|| Expect higher default rates in HY ex-energy leading to wider spreads; prefer IG

|| Europe to outperform || Fundamentals stronger in Europe (e.g., less energy exposure, less aggressive debt accumulation) – European credit should outperform

|| Adjustment will not be smooth, but better external resilience, a gradual pace of hikes and cheaper valuations limit the downside

|| Under pressure from stronger dollar, higher real yields

|| Supply adjustment is underway for oil, though market is oversupplied until 2017

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The FOMC will take a more hawkish direction in 2016 – but we do not anticipate any significant policy implications from this shift  
The change of voting members will result in a more hawkish FOMC  
# of voting members

0  
1  
2  
3  
4  
5  
6  
7

Dovish

Composition of FOMC: shifting more hawkish  
Kocherlakota Evans Brainard Tarullo Rosengren  
2015  
2016

Dovish

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Hawkish

Notes: Faded pictures denote non-voting members. Kocherlakota to be replaced by Neel

Kashkari (non-voting), not included. Members grouped by level of dovish / hawkishness but within each sub-group ordering may not reflect differences in dovish / hawkishness

14

2015

2016

FOMC becomes  
more hawkish on  
average

||| The Fed's voting members rotate annually except for several permanent spots (e.g., Chair, Board of Governors and NY Fed president)

||| Voting seats are set to shift in a more hawkish direction in 2016

– One less dove (Evans) and a net gain of two more hawkish voters (gain Mester, George and Bullard and lose Lacker)

Hawkish

Note: dotted lines represent average hawkish / dovish score each year.

Source: Deutsche Bank Research

||| While this could affect policy at the margin, we do not anticipate any significant policy implications

form this shift

Yellen

Dudley

Lockhart

Williams

Fischer

Powell

Kaplan

Mester

Harker

Lacker

Bullard

George

## Appendix

Despite substantial progress towards its targets since the crisis,  
Fed policy remains extremely accommodative  
Policy is its furthest from normal on record even as the Fed nears its  
targets on unemployment and inflation

12

16

20

0

4

8

1960

1970

1980

1990

2000

The key considerations for the first hike have been met

Unemployment

Employment

Job creation

Core inflation

(PCE)

Inflation

Wage inflation

Inflation

expectations

Other

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Financial

conditions

~

~

~

█ Remains robust

█ Stable at just 1.3% yoy but  
expected to rise

█ Trending higher, but still low

█ Survey: mixed recently

█ Market: low but have risen

█ Market hike odds have risen

█ Financial conditions have  
eased a bit

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|| At NAIRU, broader slack  
measures also diminished  
2010

Note: (\*) Our distance measures follow a speech by St. Louis Fed President  
Jim Bullard on 17 July 2014

Source: Haver Analytics, Deutsche Bank Research

Distance from targets\*

Distance from "normal policy"\*

|| Fed has made considerable progress on its dual  
mandate

- Headline inflation is low due to transitory factors  
and core inflation is firmer
- Labour market is at full employment

|| Yet, Fed policy has remained stuck at "crisis" levels

- Fed funds rate still near zero
- Fed's balance sheet expanded to ~\$4.5tn, more  
than five times its pre-crisis level

|| As a result, current monetary policy is the furthest  
from normalised policy on record

|| The Fed has explained this divergence from normal  
policy in a number of ways

- Other measures of labour market slack are  
elevated (e.g., high part-time employment)
- Headwinds have significantly reduced the  
neutral fed funds rate since the financial crisis
- Greater risk is hiking too early at 0% rates

|| While these considerations continue to support  
gradual rate hikes, they no longer justify near-zero  
rates

16

Hike

considerations

Significant progress toward the Fed's full employment objective and robust momentum justify a Fed funds rate well above zero  
US economy is near full employment, confidence is high and leading indicators are supportive, even if some measures of slack remain high  
Leading Indicators

7-8

8. Firms unable to fill job openings near 15-year high – labour market is tight for small businesses

1. Payroll employment growth has averaged 240k per month over past 18 months, near the fastest pace since 2000

7. Initial claims near 40+ year lows; signal further progress on unemployment is likely forthcoming

2. Job openings near record high levels, suggesting employers are looking to expand employment

Employer Behaviour

1-2

6. Work part time for economic reasons remains elevated as many would like a full-time job but have settled for part-time work – slack remains

3. Hiring plans over the next 3 months for small businesses are near pre-crisis levels – employment growth should remain robust

Dec-07 (pre-crisis; seen as a solid reference)

Dec-09 (worst of the crisis)

Current

Reference Points

Utilisation

5-6

5. Unemployment: at 5.0%, has fallen to post-crisis low, and within the range the Fed believes will begin to lead to higher inflation

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4. Quits: leading indicator for wage growth – more people

quitting means they can find  
higher paying jobs elsewhere

Confidence

3-4

Outward movement in the spider chart denotes improvement. Source: Haver  
Analytics, BLS, National

Federation of Independent Businesses, Department of Labour, Deutsche Bank  
Research

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Although inflation is well below the Fed's objective, it is expected to rise ahead

|| Inflation still well below 2% target: headline inflation near 0%; core inflation 40-70bp below target

|| Weakness due primarily to forces Fed describes as temporary (e.g., USD surge, oil price drop)

|| Inflation outlook is more important than current data

- Monetary policy acts with a lag: Fed thinks it takes 12-18 months for policy to have full effect
- Fed must be reasonably confident inflation will return to target to hike - but doesn't need to wait for inflation to rise

|| Key inputs into this assessment include

- Outlook for growth / labour market (positive)
- Inflation expectations (positive)
- Import price inflation / dollar (negative)

|| Core inflation unlikely to rise significantly next year

- Strong dollar should continue to weigh on inflation next year
- Falling commodity prices may be more persistent than Fed believes

|| But we and the Fed see inflation nearing 2% target over next 2 years, as temporary factors dissipate and labour market continues to tighten

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Inflation is expected to rebound from current low levels and approach the Fed's target\*

-0.5

0.0

0.5

1.0

1.5

2.0

2.5

%yoy

Fed's target\*

Headline CPI inflation

Core CPI inflation

2013

2014

2015

2016

2017

Note (\*): The Fed officially targets 2% for headline PCE inflation. This is roughly equivalent to 2.3% for headline CPI inflation, given that CPI inflation tends to run a few tenths about PCE.

Source: BLS, Haver Analytics, Deutsche Bank Research

Well-anchored survey measures of inflation expectations more important to Fed than sharp drop in market measures

2012-12-31 = 100

100

60

70

80

90

2012

Well-anchored survey based expectations...

Survey of Professional Forecasters

U Michigan, (consumer)

...contrasts with drop in market-implied inflation expectations

2013

2014

Source: U Mich, FRB Phil SPF, Haver Analytics, Deutsche Bank Research

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Market 5y5y

breakeven

## Appendix 1

### Important Disclosures

#### Additional Information Available upon Request

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#### Attribution

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