|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | FFER | GDP | Unemployment Rate | Inflation Rate |
| 1993 | 3.00% | 2.80% | 5.50% | 2.70% |
| Jan2002 – Oct2002 | 1.75% | 1.70% | 6.00% | 2.40% |
| July 2003 –  Jun 2004 | 1.25% | 2003: 2.9%  2004: 3.8% | 6.0%  for both years | 2003: 2.4%  2004:  1.9% |
| Jan2016 –  Nov2016 | 0.75% | 1.60% | 4.60% | 2.10% |
| 2008 | 0.25% | -0.10% | 6.00% | 0.10% |
| 2009 | 0.25% | -2.50% | 9.30% | 2.70% |
| 2010 | 0.25% | 2.60% | 9.60% | 1.50% |
| 2011 | 0.25% | 1.60% | 8.90% | 3.00% |
| 2012 | 0.25% | 2.20% | 8.10% | 1.70% |
| 2013 | 0.25% | 1.80% | 7.40% | 1.50% |
| 2014 | 0.25% | 2.50% | 6.20% | 0.80% |
| 2015 | 0.25% | 2.90% | 5.30% | 0.70% |
| 2020 (forecast) | 1.75% | 2.00% | 3.70% | 2.73% |
|  |  |  |  |  |

**1993**

Why was interest rate kept on hold in 1993?

* The period was characterised by substantial swings in the outlook for economic activity and inflation
* Fed’s long term goal: continuous progress toward price stability
* Initial projection in 1992 of 1993’s economy: FOMC projected that the economy would grow at a healthy pace in 1993
  + Expecting a 3-3.25% of GDP
  + Moderate acceleration for output growth
  + Downward trend of inflation: CPI between 2.5% to 2.75%
* Second quarter of 1993
  + Revise estimate of real GDP growth rose less then 1 percent in the first 3 months of 1993
  + CPI was accelerating, at 4.25% in Apr 1993
  + Such high inflation rate was kinda unexpected because there has been a deceleration in M2 growth and historically, M2 growth and inflation rate has been somewhat correlated --> this relationship is not holding now in 1993, but M1 is increasing at a double digit rates, more consistent with rising inflation
* June report: tightening bias due to inflation concern
* After mid year projection:
  + real GDP growth to be 2.25% to 2.75%
  + CPI revised upwards to 3 to 3.25%
* All the fears were unnecessary and the GDP turned out to be what was projected at the end of 1992
* Should not be surprised that bond price fell in 1993 because CPI inflation was more than half a percentage points lower than in the first three years of the previous cyclical upturn
* **The mere hint of policy tightening bias in May 1993 appear sufficient to reassure market participants of a monetary policy response in the event of a persistent inflation flare up**

1. Not much daily change. Even in EDc16, 72% of daily change is within -5bp to 5bp!!!

|  |  |
| --- | --- |
| Daily moves | 1993 |
| Between -5bp to 5bp | 69.92% |
| Less than -5bp | 16.10% |
| Less than -10bp | 5.03% |
| More than 5bp | 13.99% |
| More than 10bp | 5.03% |

1. For weekly change, more changes in 1993: 33.19% stay within -5bp to 5bp move

|  |  |
| --- | --- |
| Weekly moves | 1993 |
| Between -5bp to 5bp | 32.61% |
| Less than -5bp | 39.04% |
| Less than -10bp | 23.44% |
| More than 5bp | 28.35% |
| More than 10bp | 20.56% |

**2002**

* Pace of economic activity picked up in the first half of 2002
* Increase in real GDP was particularly rapid in the first quarter of 2002
* Overall inflation was boosted by a surge in energy prices in March and April
* Interest rates and equity indexes rose noticeably towards the end of the first quarter in reaction to better than expected economic data
* But treasury yields and equity prices more than rolled back those increases on renewed questions about the strength of the rebound in the economy

1. Daily volatility is a bit higher in 2002

|  |  |
| --- | --- |
| Daily moves | 2002 |
| Between -5bp to 5bp | 55.39% |
| Less than -5bp | 27.14% |
| Less than -10bp | 12.11% |
| More than 5bp | 17.47% |
| More than 10bp | 9.35% |

1. Weekly volatility is a bit higher in 2002

|  |  |
| --- | --- |
| Weekly moves | 2002 |
| Between -5bp to 5bp | 27.70% |
| Less than -5bp | 46.72% |
| Less than -10bp | 33.10% |
| More than 5bp | 25.58% |
| More than 10bp | 18.69% |

**Jul 2003 to Jun 2004**

1. Daily volatility is a bit higher in 2002

|  |  |
| --- | --- |
| Daily moves | 2003-2004 |
| Between -5bp to 5bp | 62.06% |
| Less than -5bp | 17.37% |
| Less than -10bp | 6.82% |
| More than 5bp | 20.56% |
| More than 10bp | 9.41% |

1. Weekly volatility is a bit higher in 2002

|  |  |
| --- | --- |
| Weekly moves | 2003-2004 |
| Between -5bp to 5bp | 38.26% |
| Less than -5bp | 24.42% |
| Less than -10bp | 17.07% |
| More than 5bp | 37.33% |
| More than 10bp | 27.95% |

**APPENDIXX**

**2016**

Flattening of the eurodollar futures contract on the short end...

QE in 2016, interest rates (but only on the long end) were effectively 0 ??

Rising interest rates environment in 2016 (find out why?!!)

1. Not much daily change!

|  |  |
| --- | --- |
| Daily moves | 2016 |
| Between -5bp to 5bp | 86.90% |
| Less than -5bp | 6.95% |
| Less than -10bp | 1.41% |
| More than 5bp | 6.14% |
| More than 10bp | 1.19% |

1. Weekly change is also limited

|  |  |
| --- | --- |
| Weekly moves | 2016 |
| Between -5bp to 5bp | 54.16% |
| Less than -5bp | 22.14% |
| Less than -10bp | 10.30% |
| More than 5bp | 23.71% |
| More than 10bp | 10.85% |

For 2010 to 2015

About 2010 to 2015: low interest rate environment

Basically, nothing moved because everyone knew fed is not going to do anything. So we should not use this time period as our basis of comparison

Preliminary observations:

1. Not much daily change. Even in EDc16, 60% of daily change is within -5bp to 5bp!!!

* For all contracts, 83.79% doesn’t move beyond -5 to 5bp

|  |  |
| --- | --- |
| Weekly moves | 2010-2015 |
| Between -5bp to 5bp | 83.57% |
| Less than -5bp | 8.29% |
| Less than -10bp | 2.95% |
| More than 5bp | 8.13% |
| More than 10bp | 3.10% |

1. Not much weekly change either, 59.46% stays within -5bp to 5bp move for all contracts

|  |  |
| --- | --- |
| Weekly moves | 2010-2015 |
| Between -5bp to 5bp | 60.89% |
| Less than -5bp | 20.58% |
| Less than -10bp | 11.06% |
| More than 5bp | 18.53% |
| More than 10bp | 10.31% |