



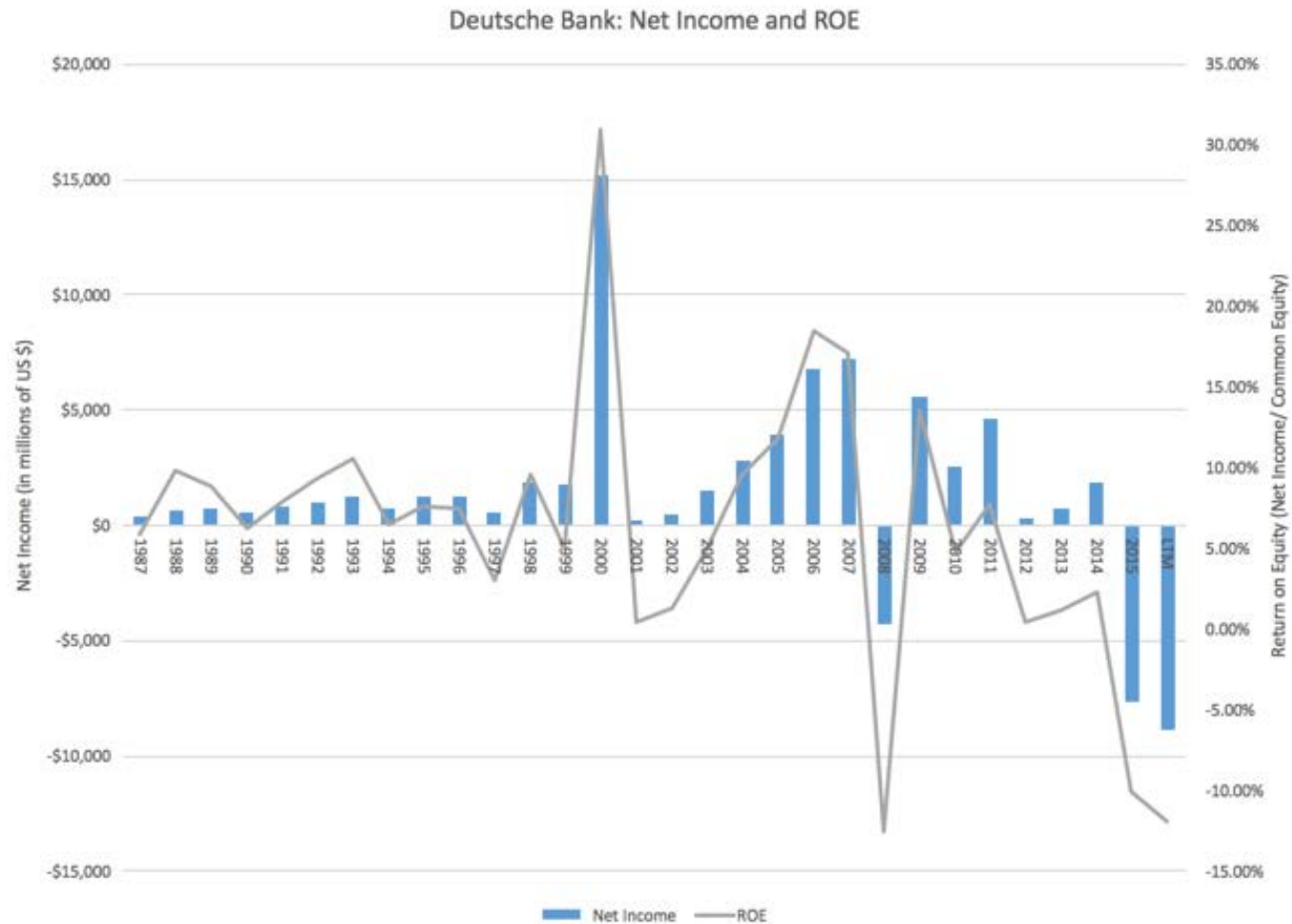
# DEUTSCHE BANK: A GREEK TRAGEDY AT A GERMAN BANK?

Fair to whom? And whose opinion?

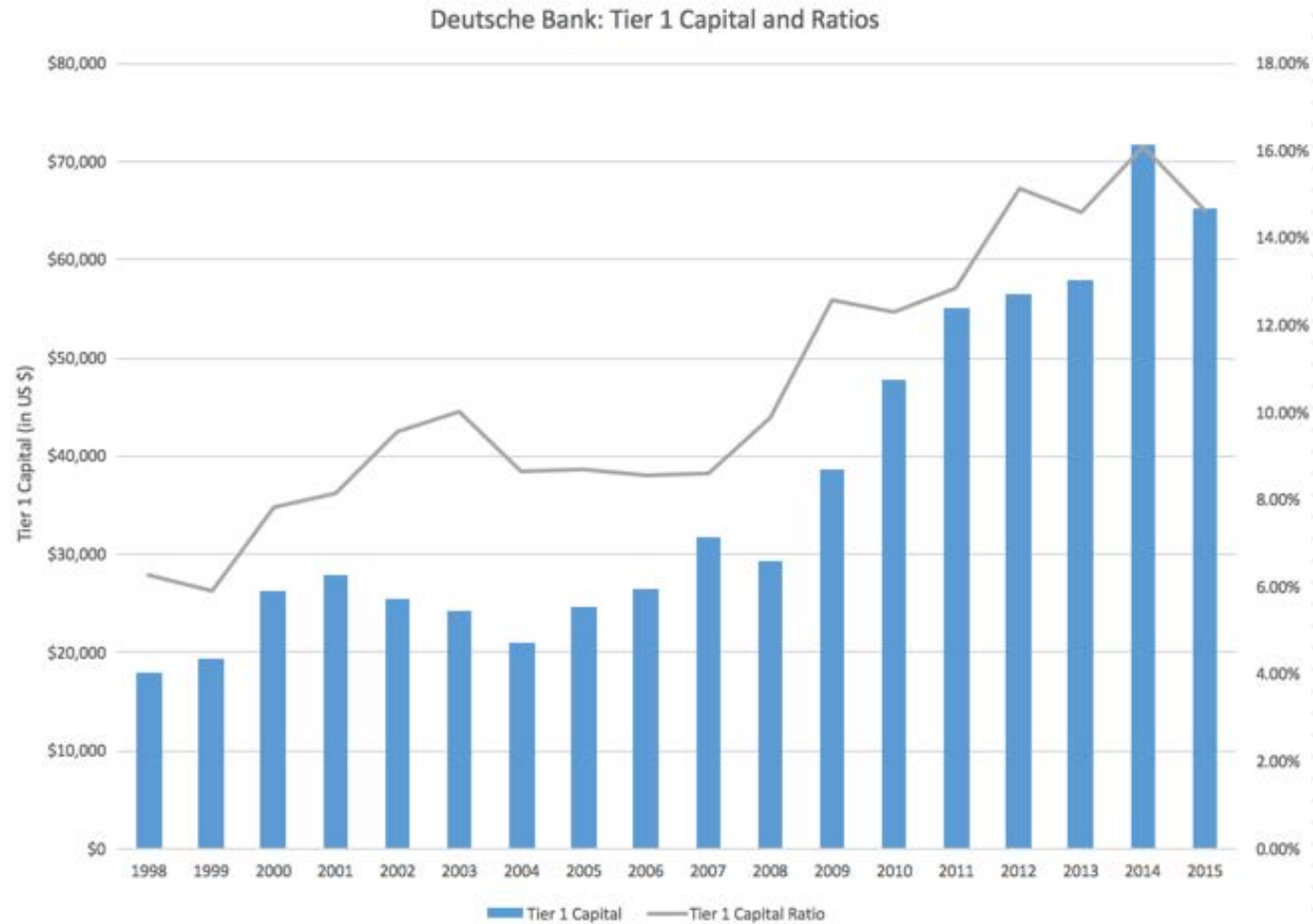
# The Deutsche Bank Meltdown

- Deutsche Bank is a German institution, an entity that has survived wars, recessions and depressions, with a historic reputation for solidity.
- In the last few years, that reputation has taken a beating, as Deutsche has been hurt not only by its foray into investment banking, but by its European exposure. The bank reported big losses and there was the sense that the bank was not as well capitalized as other large banks.
- The problems came to a boil a few weeks ago, when the US DOJ levied a fine of \$14 billion for transgressions in pricing mortgage backed securities, leading into the 2008 market crisis.

# The Lead In..

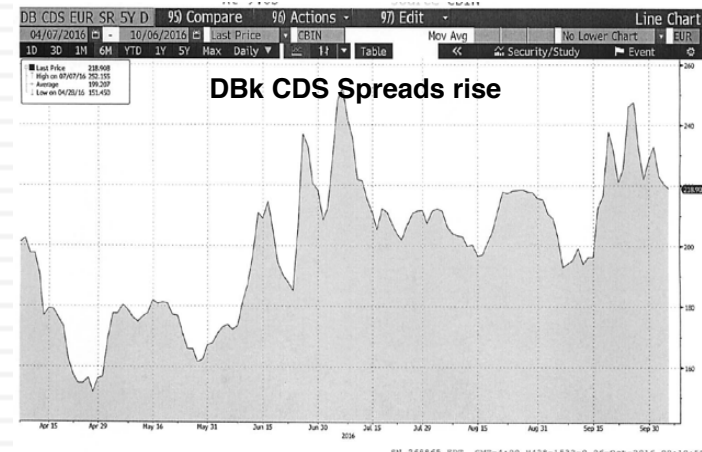
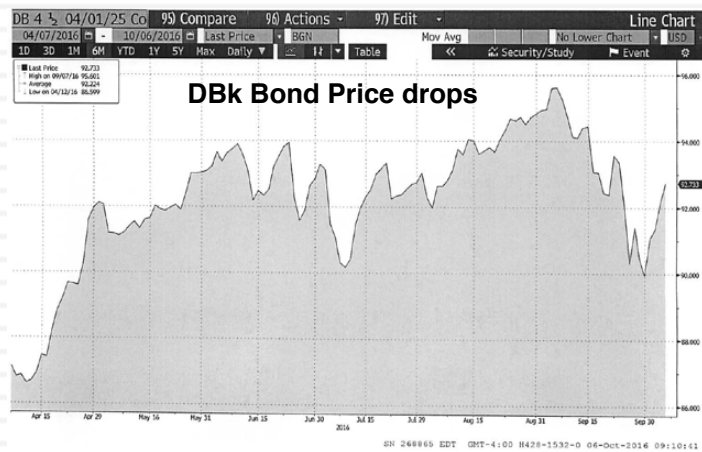


# The Tier Capital Effect

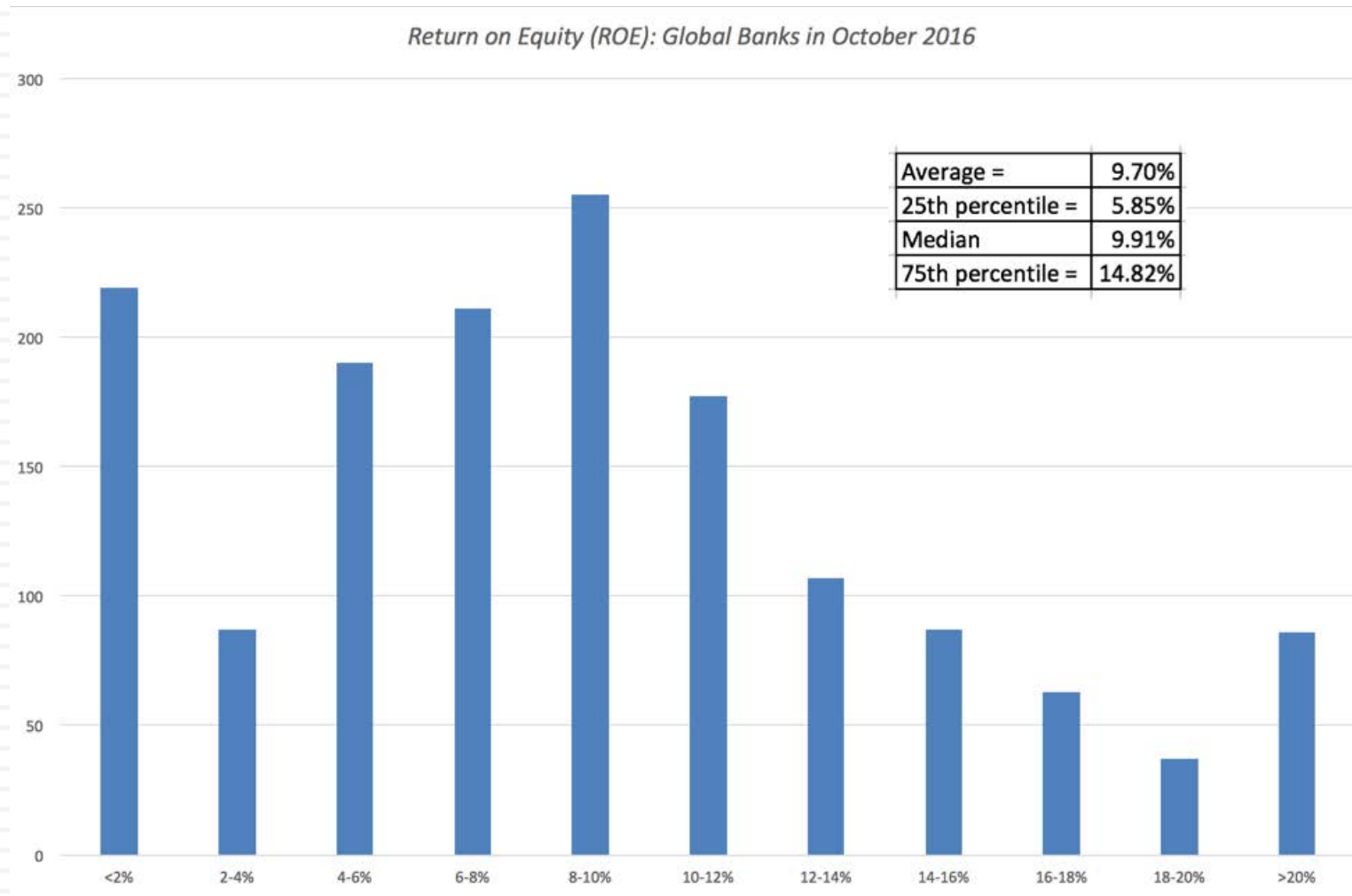


# The Market Reaction

## The Market's Crisis Reaction



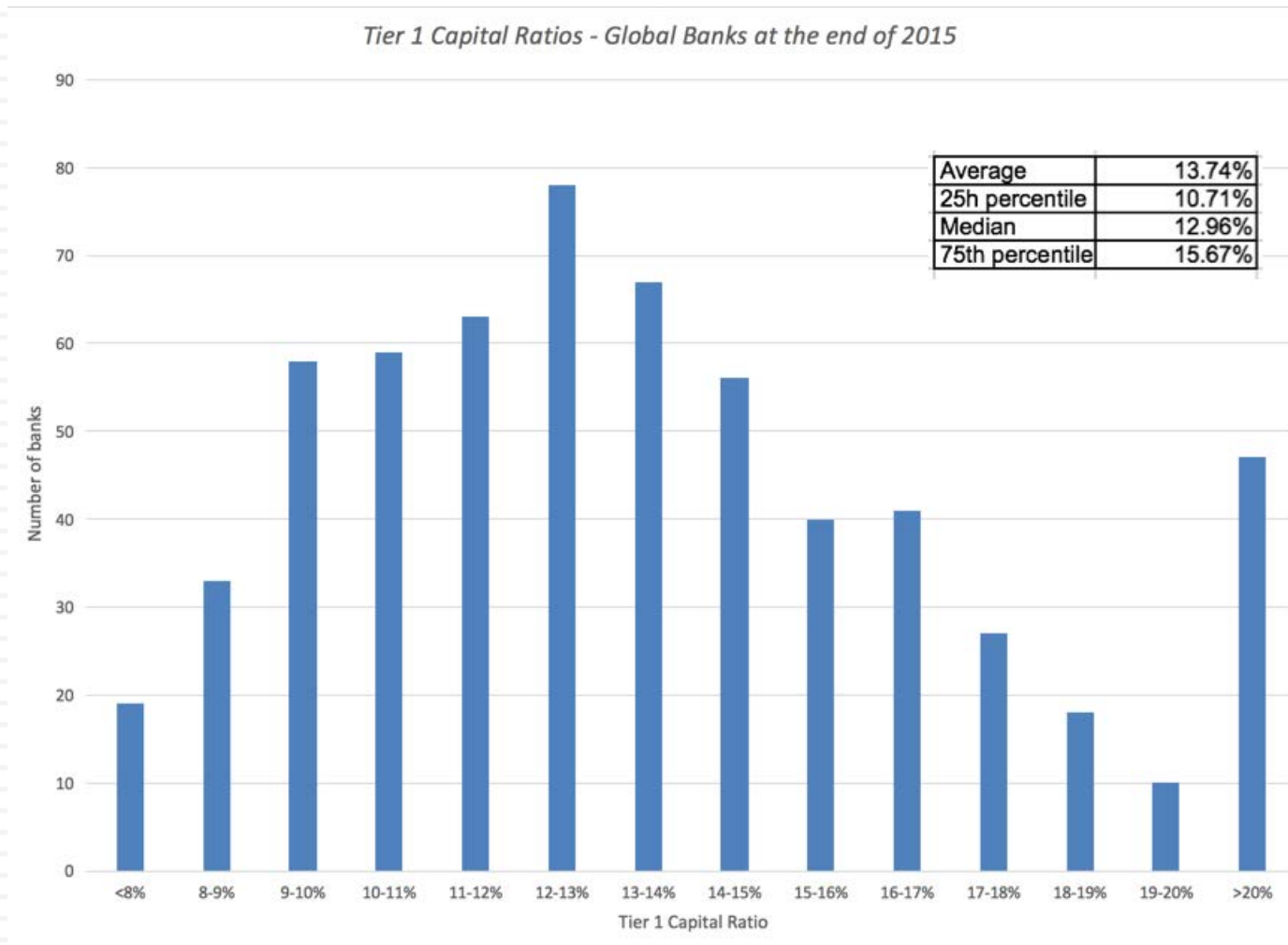
# Bank Profitability



# Deutsche Bank's Profits

Year	Common Equity	ROE	Expected Net Income
Base	\$64,609	-13.70%	\$(8,851)
1	\$71,161	-7.18%	\$(5,111)
2	\$72,754	-2.84%	\$(2,065)
3	\$74,372	0.06%	\$43
4	\$76,017	1.99%	\$1,512
5	\$77,688	5.85%	\$4,545
6	\$79,386	6.57%	\$5,214
7	\$81,111	7.29%	\$5,910
8	\$82,864	8.00%	\$6,632
9	\$84,644	8.72%	\$7,383
10	\$86,453	9.44%	\$8,161
Terminal Year	\$87,326	9.44%	\$8,244

# Banks: Tier 1 Capital Ratios





# Deutsche Bank: Tier 1 Capital and FCFE

Year	Net Income	Risk-Adjusted Assets	Tier 1 Capital/ Risk Adjusted Assets	Tier 1 Capital	Change in Tier 1 Capital	FCFE = Net Income - Change in Tier 1
Base	\$(8,851)	\$445,570	12.41%	\$55,282		
1	\$(5,111)	\$450,026	13.74%	\$61,834	\$6,552	\$(11,663)
2	\$(2,065)	\$454,526	13.95%	\$63,427	\$1,593	\$(3,658)
3	\$43	\$459,071	14.17%	\$65,045	\$1,619	\$(1,576)
4	\$1,512	\$463,662	14.38%	\$66,690	\$1,645	\$(133)
5	\$4,545	\$468,299	14.60%	\$68,361	\$1,671	\$2,874
6	\$5,214	\$472,982	14.81%	\$70,059	\$1,698	\$3,516
7	\$5,910	\$477,711	15.03%	\$71,784	\$1,725	\$4,185
8	\$6,632	\$482,488	15.24%	\$73,537	\$1,753	\$4,880
9	\$7,383	\$487,313	15.46%	\$75,317	\$1,780	\$5,602
10	\$8,161	\$492,186	15.67%	\$77,126	\$1,809	\$6,352
Terminal Year	\$8,244	\$497,108	15.67%	\$77,897	\$771	\$7,472

# Cost of equity for a bank

- Assuming that the median bank is mature, you can write the price to book ratio as a function of its ROE and cost of equity
  - ▣  $PBV = \frac{(ROE - g)}{(\text{Cost of equity} - g)}$
  - ▣  $\text{Implied Cost of Equity} = \frac{(ROE - g)}{PBV} + g$
- Plugging in the median bank's numbers into this equation and using a nominal growth rate set equal to the risk free rate (in US dollars), I estimate a cost of equity for the median bank to be 9.44% in 2016.
  - ▣  $\text{Implied Cost of Equity for median bank} = \frac{(.0991 - .016)}{1.06} + .016 = 9.44\%$
- Using the same approach, I arrive at estimates of 7.76% for the banks that are at the 25<sup>th</sup> percentile of risk and 10.20% for banks at the 75<sup>th</sup> percentile.

# Valuing Deutsche Bank's Equity

Year	FCFE	Terminal Value	Cost of equity	Cumulative Cost of Equity	PV
1	\$(11,663)		10.20%	1.1020	\$(10,583.40)
2	\$(3,658)		10.20%	1.2144	\$(3,012.36)
3	\$(1,576)		10.20%	1.3383	\$(1,177.54)
4	\$(133)		10.20%	1.4748	\$(90.34)
5	\$2,874		10.20%	1.6252	\$1,768.16
6	\$3,516		10.05%	1.7885	\$1,965.99
7	\$4,185		9.90%	1.9655	\$2,129.10
8	\$4,880		9.74%	2.1570	\$2,262.34
9	\$5,602		9.59%	2.3639	\$2,369.91
10	\$6,352	\$87,317	9.44%	2.5871	\$36,206.88
Total value of equity =					\$31,838.74
Number of shares =					1386.00
Value per share =					\$22.97

# Adjusting for Catastrophic Loss

- There is the possibility that Deutsche Bank's problems could spin out of control, leading to a bailout or nationalization, and my equity value going to zero. Attaching a 10% probability of an equity wipeout:

- Expected Value per share =  $\$22.97(.9) + \$0.00(.1) = \$20.67$

Unadjusted Equity Value =	\$33.63	
- Dilution Effect from new equity issues	\$(10.66)	-31.69%
- Expected cost of equity wipeout	\$(2.30)	-6.83%
Value of equity per share today =	\$20.67	

# Act or Wait?

- Case for action: The stock is under valued and there is no point to doing valuation, if you are not going to act on the valuation.
- Case for inaction: Too much uncertainty? So what? Either the uncertainty will be resolved (in good or bad ways) and everyone will have clarity on what Deutsche is worth, and the price will adjust, or the uncertainty will not resolve itself in the near future and I will sit on the side lines
- My decision: Buy now, no regrets later!