Memorandum

To : FORUM Staff

From : BW

Copy to :

Date : July 12th, 2016

Subject : Macro Dashboard Q II 2016 V_2.1

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1. Summary of Results

1.1 Profits and Valuations

In Q I 2016 the level of **US Corporate profitability** shows a mixed picture. In the last edition we warned that a Reversion to the Mean may have started from elevated levels of profitability. With the data unclear in the last quarter we will have to wait for another quarter to get more evidence about the trend momentum.

Nevertheless the level of corporate profitability is at the high levels that were last seen right after WWII and in the run-up to the financial crisis 2008/2009.

Valuations in Q I 2016 increased slightly again - but not remarkably. CAPE increased slightly from 25,6x to 26,2x - implying an overvaluation of nearly 60% compared to its historical averages.

As a result expected real returns from US equities continue to be below their historical average of 6,3% p.a. History suggests **real returns of ca. -2% to 0% p.a. over the next 5 – 10 years in the USA.**

1.2 Risks

At the end of Q II 2016 the Brexit vote has increased the risk to the global economy and the financial system. There are second-order effects across the world, most remarkably to the Japanese economy which is suffering from the revaluation of the Yen. And there is still the big elephant in the room called China - where the economic growth is based on an unbalanced approach which may lead to problems from overinvestment at any time.

1.3 Conclusions for FORUM

We will respond to this assessment of the situation by **staying cautious – decreasing our target net equity long exposure to 65 - 70%.** We reiterate, though, that if an outstanding investment opportunity presents itself we will take it - in the end we are bottoms-up driven.

2. Status of the Profit Cycle

2.1 US After-Tax Corporate Profits as % of GDP (Appendix 2.1)

2.1.1 Total Profits

In Q I 2016 **US after-tax Corporate Profits** recovered to **7,4%** (Q IV 2015: **7,0%**) **of GDP**. Looking back this puts it into a high range which was reached before right after the end of WWI and in 2007 - right before the financial crisis.

In the last two quarters it had dropped and we had been speculating whether this was the beginning of an RTM process - this quarter puts a question mark to this hypothesis.

The current level implies a **ratio of 133% of its 85-year average since 1929** which stands at 5,5%. **This corresponds with 1,0x standard deviations** – up from 0,7x at the end of the previous quarter.

2.1.2 Non-Financial Profits

In Q I 2016 **US revised after-tax Non-Financial Corporate Profits** – eliminating the volatility of banking profits – **showed a similar pattern:** they increased to **6,0% of GDP** – up from 5,6% at the end of Q IV 2015. This puts it back into the range of 6,0 - 6,5% in which this metric moved for most of 2012 to mid-2015.

The 85-year average is 4,5%. Thus in Q I 2016 US after-tax Non-Financial Corporate Profits stood **at 135% of their long-term average. This corresponds with 0,9x standard deviations** – up from 0,6x in the previous quarter.

2.2 US Corporate EBITDA (Appendix 2.2)

The second metric we use for assessing corporate profitability is **US Corporate EBITDA** (Net Operating Surplus plus Consumption of Fixed Capital divided by Gross Value Added). It eliminates any distortions from changes in interests or taxes.

As you can see from the **Appendix 2.2** in Q I 2016 **Corporate EBITDA decreased slightly to 33,3% -** down from 33,6% in the previous quarter. This is the third quarter in a row where we have seen quarter-over-quarter EBITDA declines.

Appendix 2.4 shows that rising wages are the main driver "eating" into corporate profits since mid-2013. At present their share of GDP is still 150bps below the 85-year average of 35,0% - which suggests further earnings pressure is still plausible in a RTM of wages.

As the 85-year average of Corporate EBITDA stands at 28,6% of GDP, the latest level implies **a ratio of 116% of the historical mean.**

The implied deviation from historical data corresponds to **1,3x standard deviations, slightly down from 1,4x at the end of the previous quarter and 1,6x the quarter before that**.

Historically US Corporate EBITDA has varied within a much tighter range (23-36%) than the rest of the metrics discussed in Chapter 2.1, e.g. US after-tax Corporate Profits ranged from 2% to 8,5%. This is due to EBITDA being "higher up" in the profit funnel, with **less exposure to the operating gearing** from depreciation, interests, and taxes which magnify the relative rate of changes.

2.3 Pre-Tax Non-Financial ROA (Appendix 2.3)

Pre-Tax Return on Tangible Assets ("ROTCE") of the US Non-Farm, Non-Financial sector (as reported by the Federal Reserve) in Q I 2016 **increased from a revised 6,3% to 6,7%**.

The long-term average since the first publication of this time series in 1965 is 5,9%. Thus this measurement of **corporate profitability stood at ca. 111% of its long-term average** – in line with the other two profit metrics outlined above. **This corresponds with 0,4x standard deviations, slightly down from 0,5x at the end of the previous quarter.**

2.4 S&P 500 – Earnings per Share (Appendix 2.5)

In Q I 2016 Earnings per Share ("**eps**") of the S&P 500 stood at $ 21,93 – decline of 0,9% vs. Q I 2015. This is the sixth consecutive quarter where EPS have declined YoY.

Appendix 2.5 shows that eps was growing strongly above its trendline in the years to 2014. Eps growth is now reverting to trend-line growth.

2.5 FORUM Conclusions on Profitability

In Q I 2016 profit metrics show an unclear picture with two up and two down. With employment and wages up as well as productivity growth at very low levels for several years we see a risk that earnings in the USA will stay under pressure going forward.

Below please find a summary of the four metrics for corporate profitability compared with their respective averages and expressed in standard deviations:

Metric	% of LT Average	Standard Deviations
Total Profitability as % of GDP	133%	1,0x SD
Non-Fin. Profits % of GDP	135%	0,9x SD
Corporate EBITDA Level	116%	1,3x SD
Non-Financial ROA	111%	0,4x SD

When viewed together, the four metrics for corporate profitability in Q I has reverted to a narrower band between 111% and 135% of their historical averages.

3. Valuations

3.1 Cyclically Adjusted PE Ratios / Shiller´s CAPE (Appendix 3.1)

For a **tops-down calibration of valuations we prefer Shiller´s CAPE**, a metric introduced in his 2000 book **"Irrational Exuberance".** It eliminates short-term earnings fluctuations by calculating a 10-year average, inflated to today´s purchasing power based on the GDP deflator. It is calculated based on all constituents of the S&P 500. We will refer to it below as Shiller´s **C**yclically-**A**djusted **P**rice **E**arnings Multiple **("Shiller´s CAPE" or just "CAPE").**

Prof. Shiller reports **a CAPE of 26,2x for June 6th, 2016,** his latest update. On that date the S&P 500 stood at 2.109. This is an unchanged from the CAPE reported at the end of the previous quarter.

The long-term average of CAPE since 1871 stands at 16,7x. This implies that **current valuations stand at 157% of their long-term average - largely unchanged from 154% at the latest letter.** In terms of statistical significance this valuation implies a **standard deviation of 1,4x** – also unchanged from our latest report.

3.2 Tobin´s q (Appendix 3.2)

Tobin's q is a ratio of the **value of the stock market relative to the replacement cost of net assets.**

The application of Tobin´s q to equity market valuations has been introduced by authors Smithers and Wright in their 2000 book "**Valuing Wall Street**" and updated by Andrew Smithers in his book "Wall Street Revalued" published in 2009. For a validation we refer to an article by Harney/Tower in the Jan. 2nd 2003 edition of The Journal of Investing. Please note that **q is only calculated on non-financial companies.**

There are two generally accepted methods to calculate this ratio:

- the US Federal Reserve Flow of Funds accounts
- Smithers & Co consultants who apply an adjustment.

There are also numerous additional versions published by consultants and market participants, thus you may get diverging data.

3.2.1 Non-adjusted Tobin´s q

Based on the latest **US Federal Reserve Flow of Funds** as of March 31st, 2016 **the non-adjusted ratio has increased to 0,97** (0,95 as of December 31st, 2015).

The non-adjusted average observed since 1900 based on our calculations is 0,77, **thus the non-adjusted Tobin's q is at 126% of its long-term average.** This corresponds - unchanged - with **0,6 Standard Deviations**[1].

3.2.2 Adjusted Tobin´s q

Smithers & Co. adjust Tobin´s q as reported by the Fed for statistical discontinuities beginning in 1983, mainly revaluations of fixed assets to market values beginning in 1984.

At the end of Q I 2016 **q ex-statistical discontinuities (line 20 of Table R 103) stood at 1,67** – up from 1,58 at the end of Q IV 2015. Based on the long-term average of 0,92 this implies **a level of 181% of its long-term average resp. 1,6x standard deviations.**

3.3 US Equity Market Capitalization as % of GDP (Appendix 3.3)

This is a metric which Warren Buffett cites often when discussing the level of valuations in equity markets.

Based on the Fed data **US market capitalization as % of GDP stood at 143%** at the end of Q I 2016, unchanged from the end of Q IV 2015.

As the 62-year average since the beginning of this time series in 1952 is 84%, this valuation implies **a level of 170% which corresponds to 1,7x standard deviations – unchanged.**

3.4 Summary and Conclusions

3.5.1 Summary of US-based Data

Below please find below a summary of the level of the valuation metrics compared with their long-term averages and standard deviations **as of March 31st, 2016 for the USA**:

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[1] We used to calculate this ratio based on a published average of 0,63 for q, but cannot replicate this number. We have therefore decided to switch now to the number of 0,76 which is based on our own calculations.

	% of LT Average	Standard Deviations
Shiller´s CAPE	157%	1,4x SD
Tobin´s q non-adjusted	126%	0,6x SD
Tobin´s q adjusted for discontinuities	181%	1,6x SD
US Equity Market Cap. as % of GDP	170%	1,7x SD[2]

Eliminating Tobin's q adjusted as an outlier, these data on equity valuation suggest that US equity markets are **overvalued by ca. 26 – 81%**. **The interpolated median of these metrics is an overvaluation by ca. 64% -** up from 58% in the previous quarter.

3.5.2 Implications for Expected Long-Term Returns

If one believes in the Mean-Reversion characteristics of valuation, the most likely assumption on expected returns on equities in the next 5 – 10 years would be **returns below long-term averages**. The long-term real return of the US equity market since 1900 including dividends has been 6,3% p.a.

The expected return will depend on the time it takes for this **overvaluation by a median of ca. 60% to unwind. In the calculation we have assumed a real profit growth of ca. 2% p.a. - in line with real GDP:**

Years for Unwinding	Real Return p.a.
2	negative
5	- 5%
10	**-3 to -2%.**

Thus today´s valuations make it unlikely that a buy-and-hold strategy of an index will generate positive real returns over a 5- or 10-year period.

As our investment results over a cycle will be determined by the returns in equity markets in general plus an outperformance of 5 – 10% p.a. created from our investment approach **these expected market returns make it very difficult for us to reach the targeted 15% p.a. return.**

3.5 Calibration against other Investors

[2] All SD calculations are based on end of previous quarter numbers.

GMO – an asset manager whose approach we share in many respects – in their **7-year Asset Class Return forecast** as of February 28th, 2016, **expects real returns of:**

a) **-1,1%** (February 28th, 2016: 0,8%) p.a. for US Small Caps

b) **-2,7%** (February 28th, 2016: -1,2%) p.a. for US Large Caps.

This is largely in line with our RTM forecasts.

3.6 European Valuations

With regard to CAPE, **European valuations as of January 29th, 2015, differ materially from the US Market**. Based on Shiller's CAPE valuation methodology valuations compare as follows:

	Current CAPE	Hist. Average	Dividend Yield	Exp. 10Y Return
USA	26,2x	16,7x	1,8%	-2 - 0% p.a.
Europe	14,8x	16,0x	3,5%	6 - 7% p.a.
Emerging Markets	13,7x		3,2%	7 - 8% p.a.

Hence the European market has a significantly lower CAPE than the USA. But when compared to its own historical average – for the period 1979-2013 –it appears **fairly valued.**

Emerging Markets offer the best value in today's stock markets.

4. Risks to Profits and Valuations

We have been **perma-bears on profits** as we believe in a Reversion to the Mean/RTM. In the last Macro Dashboard we speculated that profits may have started a process of reverting to the Mean - based on 2 quarters of declines in the Macroeconomic statistics plus calibration with the profit outlook of quoted companies. This trend has not continued, thus the call may have been premature. We will have to wait and see.

With respects to **valuations** we also believe in Reversion to the Mean/RTM. But here the Central Banks are distorting the picture by moving increasingly into negative interest territory. This creates a demand for yield-generating assets - and stocks paying a dividend with a reasonable dividend yield (see above) fall into this category. Thus it is difficult to make any predictions what will trigger a bursting of the valuation bubble.

Again, speculation that a reversion of profits might trigger a stock market reaction in our last Macro Dashboard proved premature.

5. Conclusions

5.1 Expected Economic Conditions and Equity Returns

In summary we draw the following conclusions:

a) Based on the level of profitability we expect margin compression in the next 5 - 10 years. **Average Future Conditions** of the economy will not be as good as they were in the last up-cycle which lasted from 2003 – 2008.

b) Based on valuations of equity markets, equity returns over the next 5 – 10 years in the mature economies **should be assumed to be slightly negative!**

5.2 Range of Potential Outcomes

The spread of potential outcomes remains wide:

a) stock markets could evolve further into bubble territory

b) or correct significantly before year-end.

And as always it will be impossible to time any of these directions.

6. Recommendations for the Tops-Down Portfolio Construction

In Q I 2016 profit levels have recovered from two quarters of decline, making the theory of a continuing slide and RTM premature.

At the same time for a long-term investor like us the picture does not look attractive:

a) valuations are at their historical peak

b) risks have increased - last not least from the Brexit.

Overall we **maintain target tops-down asset allocation to a net long exposure of 65 - 70%:**

a) a short book of 10 - 15%.

b) a net cash level (i.e. the cash available after covering the shorts) of 20 - 25% of AUM.

In any case we at FORUM will act opportunistically on a bottoms-up philosophy - acting on the specific opportunities the stock market will be offering us.

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3.3	Capitalization of US Companies as % of GDP

Appendix 1.1: Historical Relationship between Standard Deviations and Returns for CAPE

Stock Market Return as a Function of # Standard Deviations from Average PE/ 10

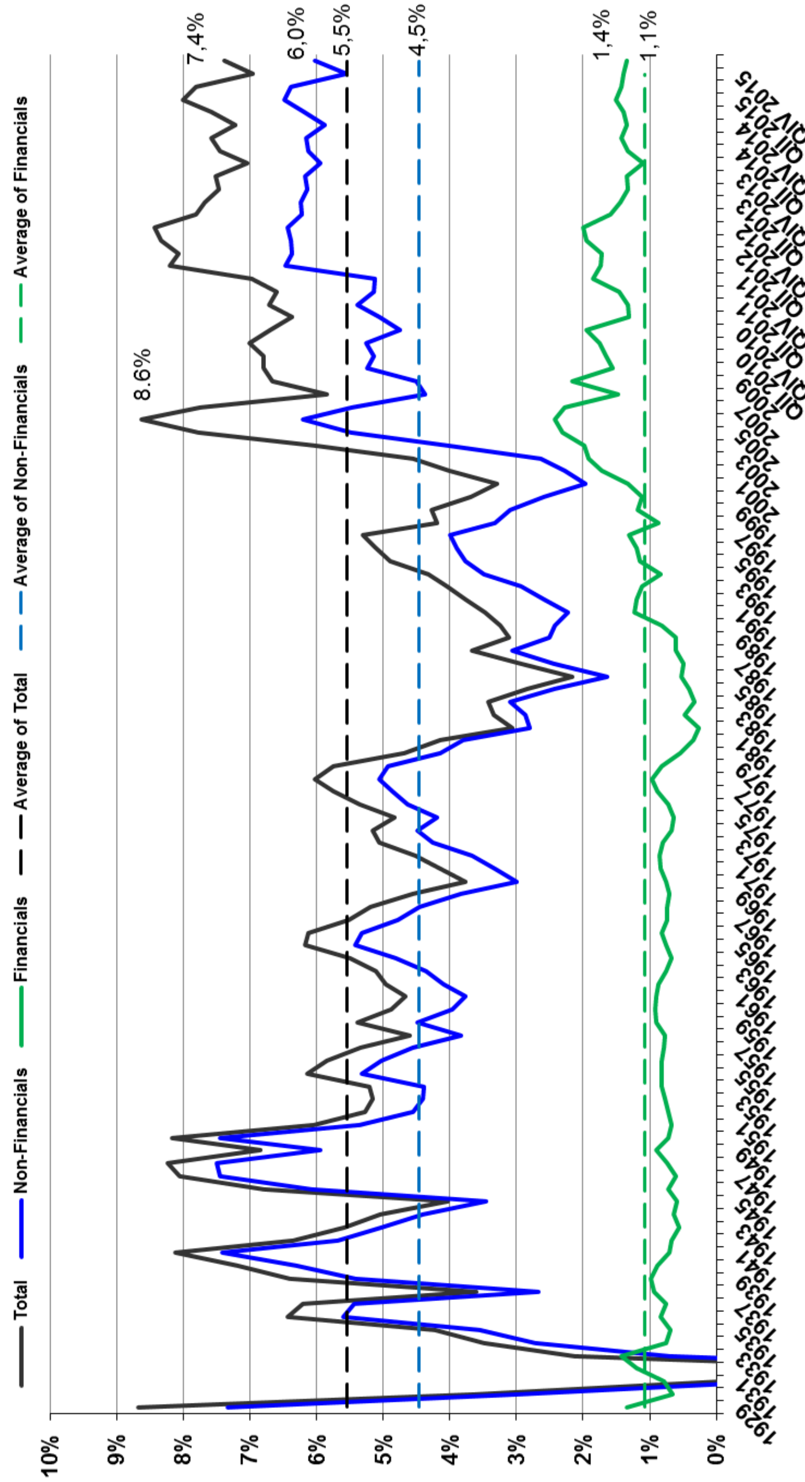
Status as of November 2nd 2010

	Deviation from average as a # of standard deviations	# months	Nominal return 2 years	5 years	10 years
Negative deviations	Less than -3	1	14.5%	5.2%	9.9%
	Between -3 and -2	79	5.3%	4.8%	7.0%
	Between -2 and -1	294	7.8%	7.8%	4.6%
	Between -1 and -0.5	226	10.5%	6.8%	6.6%
	Between -0.5 and 0	159	7.8%	5.3%	6.3%
Positive deviations	Between 0 and 0.5	169	2.1%	3.6%	5.6%
	Between 0.5 and 1	178	2.1%	2.8%	4.1%
	Between 1 and 2	297	1.6%	3.8%	2.5%
	Between 2 and 3	71	1.1%	1.7%	2.3%
	More than 3	56	0.0%	-2.7%	-0.1%
Total		1530	5.0%	4.8%	4.7%

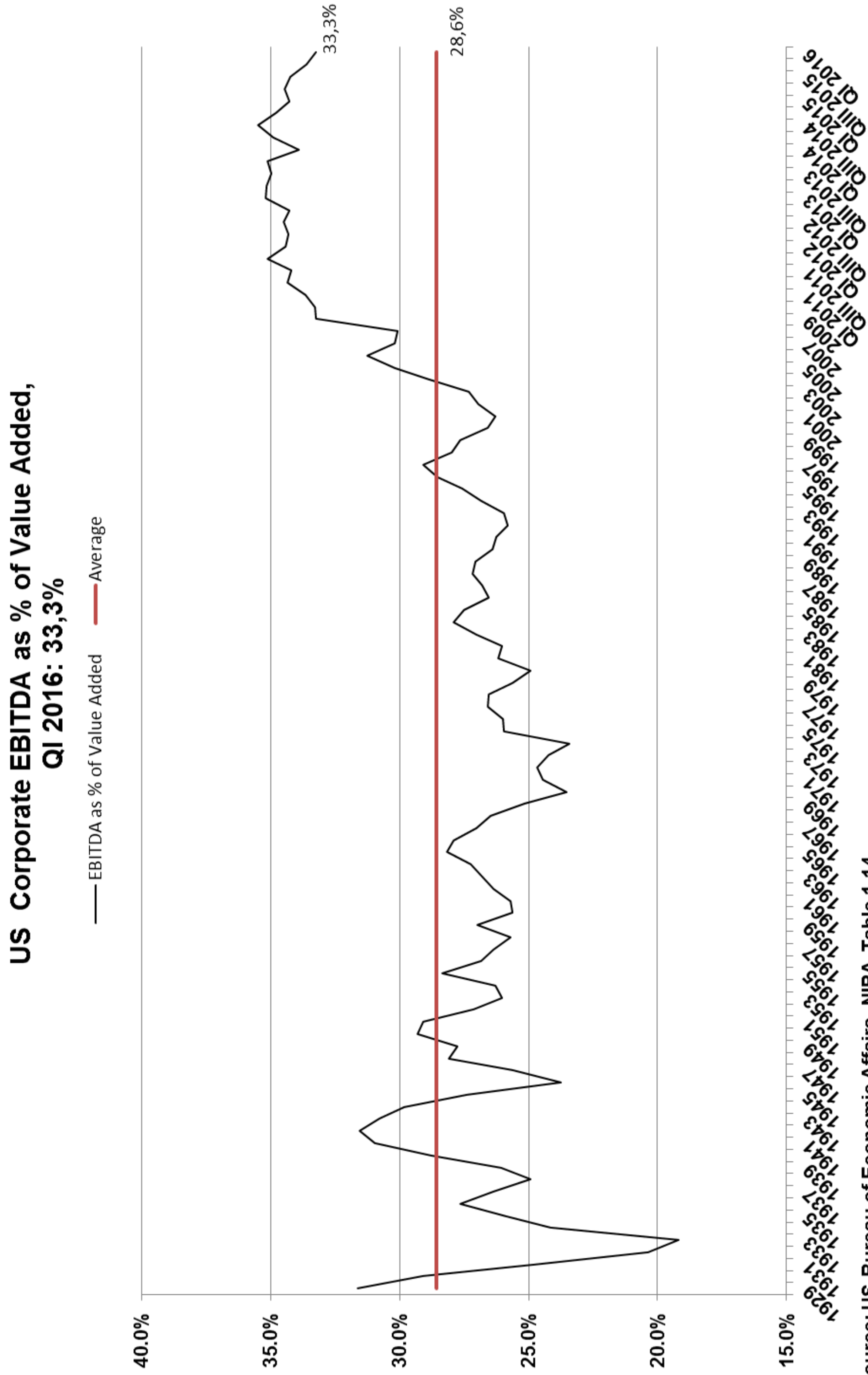
48% (Between -1 and 1)
86% (Between -2 and 2)

Period covered: 1881-2010
Source: Shiller, FORUM Research

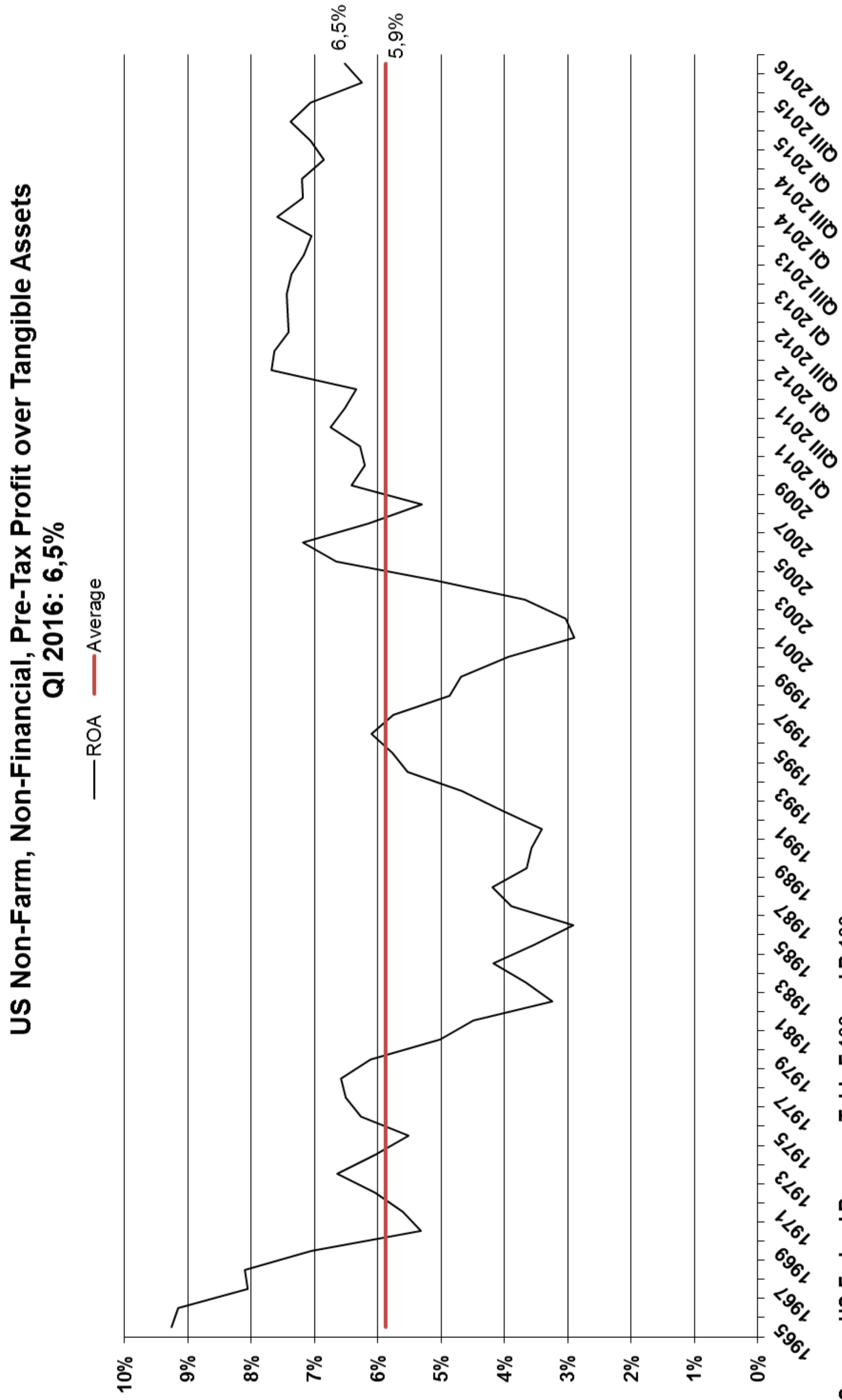
Appendix 2.1: US Corporate Profits as % of GDP



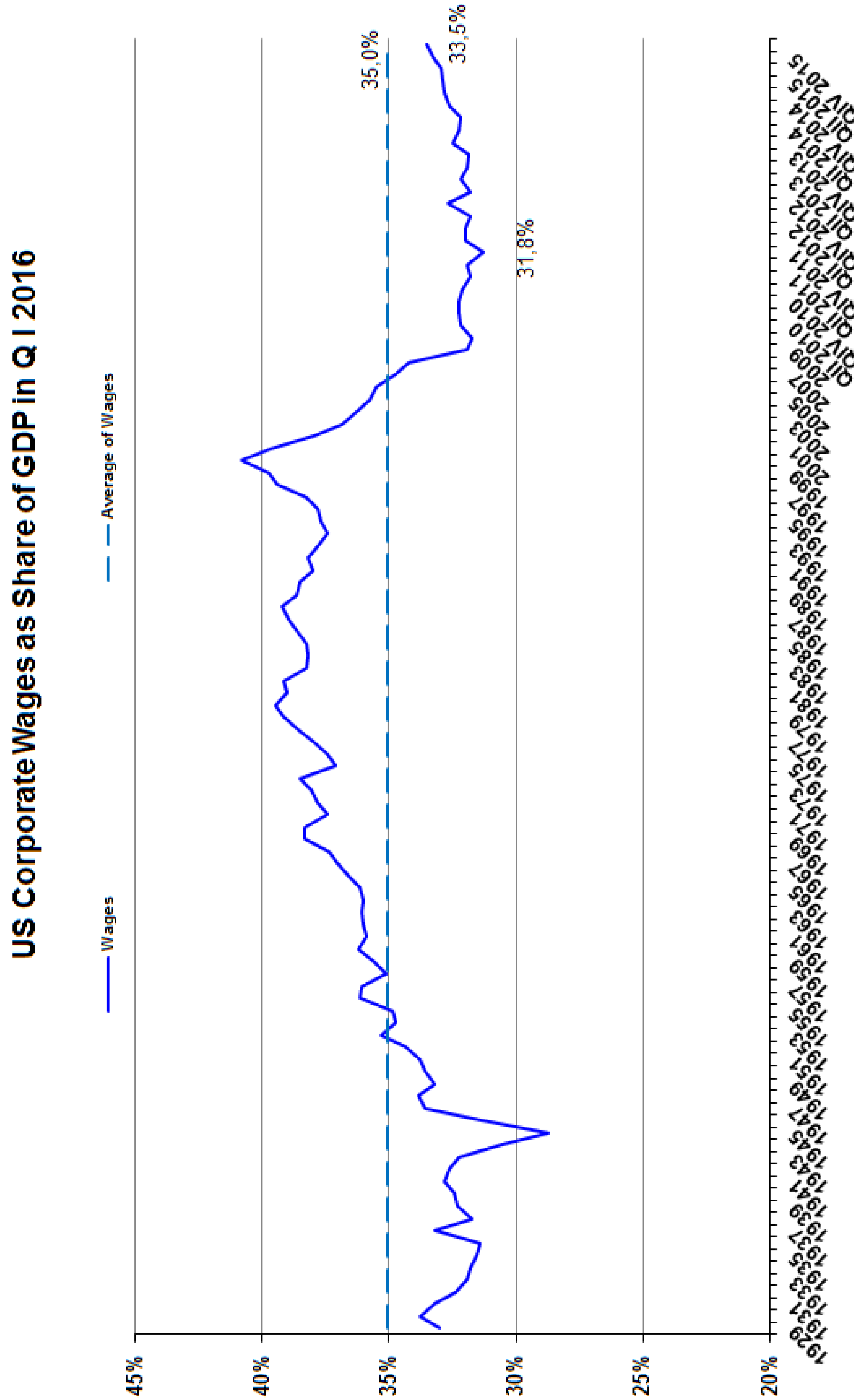
Appendix 2.2: US Corporate EBITDA



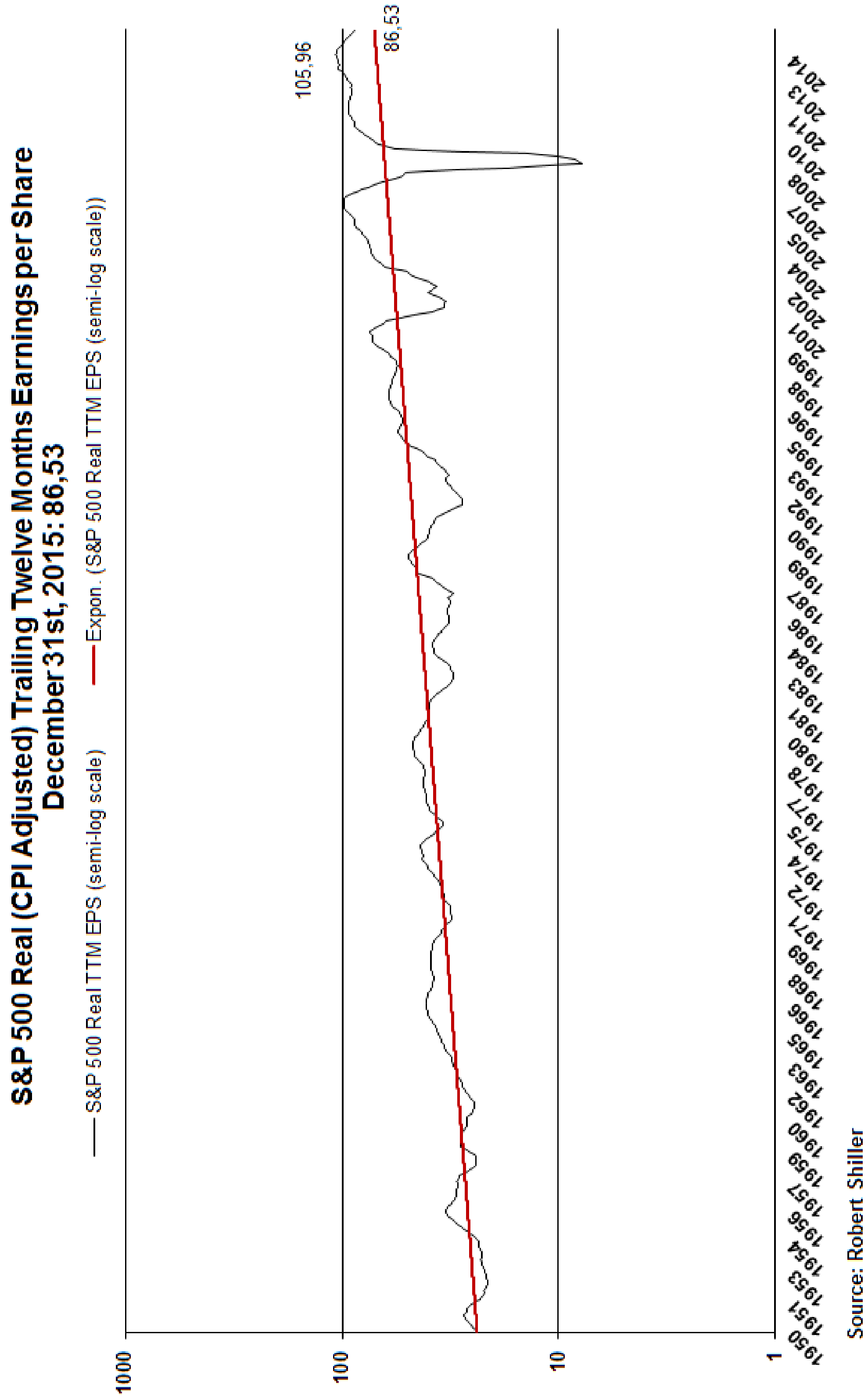
Appendix 2.3: US Corporate Profitability Measured as ROA



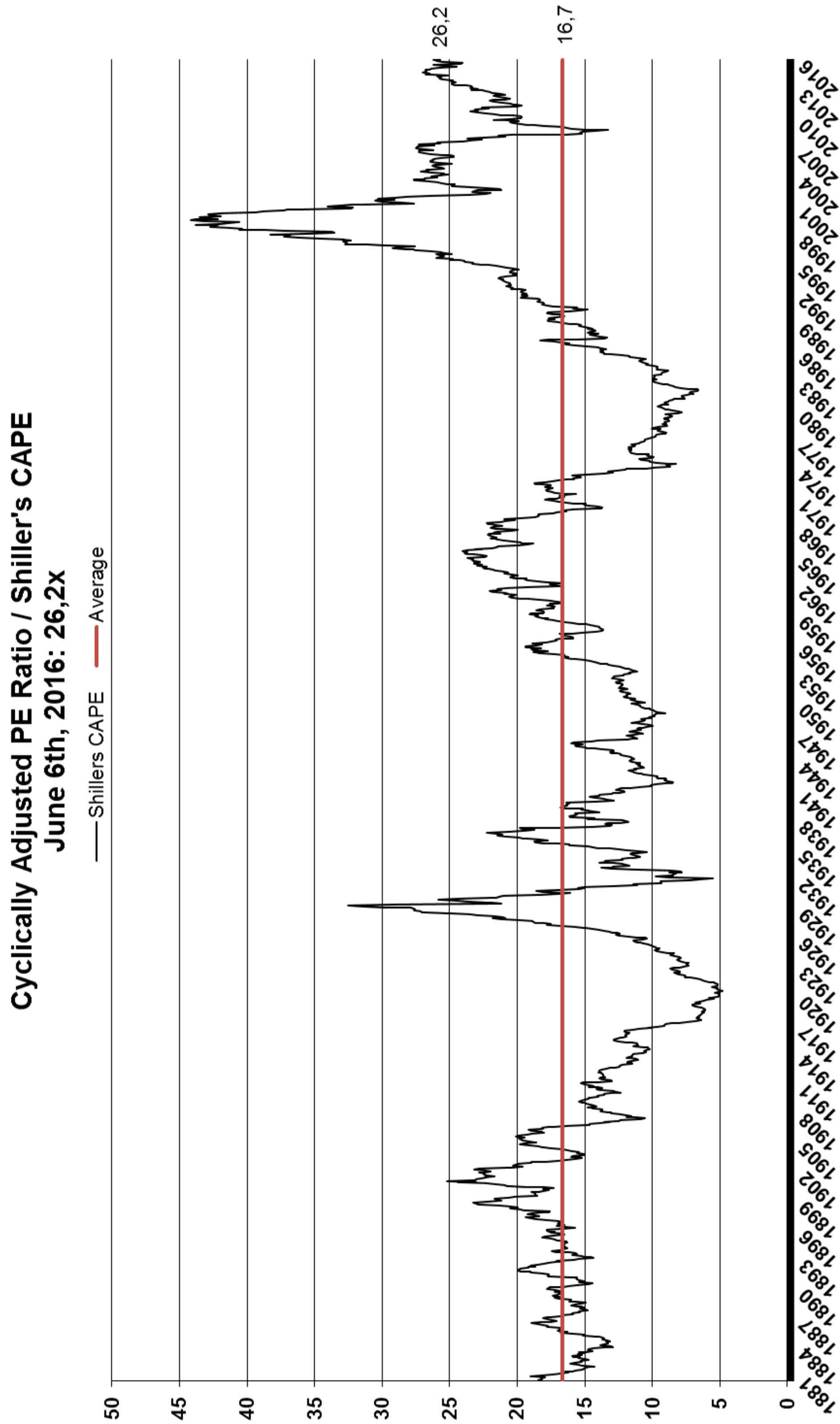
Appendix 2.4: US Corporate Wages as % of GDP



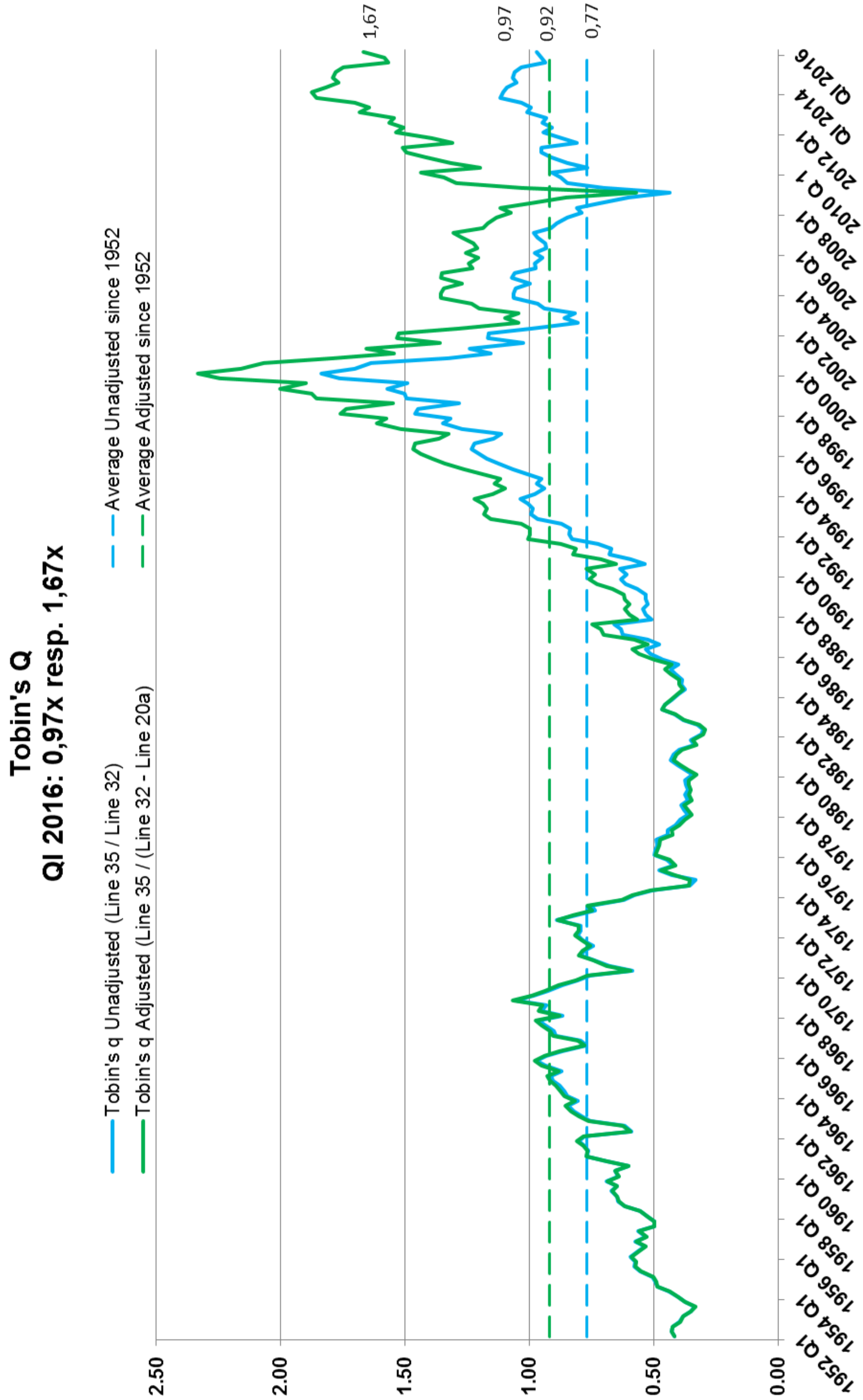
Appendix 2.5: Real (CPI Adjusted) TTM EPS of S&P 500



Appendix 3.1: Cyclically Adjusted PE Ratios / Shiller´s CAPE



Appendix 3.2 – Tobin's Q



Appendix 3.3 – Capitalization of US companies as % of GDP